

Influence of COVID-19 Pandemic on the Psychological Condition and Mental Health of Different Types of Population: A Narrative Review

Abstract

One of the most important occupational and environmental pollutants are biological agents such as various types of viruses. Recently the 2019-nCoV causes lower respiratory tract disease, called novel coronavirus pneumonia that in addition to causes physical disorders, can lead to mental health problems. This study looks at some of the articles that deal with psychological problems caused by the coronavirus pandemic in different groups of people. For this purpose, a review of the published literature was performed in some databases (PubMed, Google Scholar, Elsevier) and related references were used.

Keywords: COVID-19, environmental exposure, occupational exposure

**Sara Karimi
Zeeverdegani**

Department of Occupational Health Engineering, School of Health, Isfahan University of Medical Sciences, Isfahan, Iran

Introduction

At the end of 2019, the novel COVID-19 disease was seen in Wuhan City, China,^[1] and on March 11, 2020, the World Health Organization declared the COVID-19 outbreak a pandemic.^[2] Coronavirus has led to pollution in workplaces and environments, which has led to various effects on people's health.

The rapid spread of this virus and the severity of symptoms cause several problems. This pandemic has affected daily life due to the quarantining of entire communities, the closing of schools, shelter-in-place orders, and social isolation.^[3] COVID-19 pandemic is challenging healthcare systems around the world^[4] affecting people's lives with stress. In addition to the risk of close contact with patients, healthcare workers are under stress and other psychological risks,^[5] and besides, social distancing leads to more mental disorders.^[6] The uncertainty about the endpoint of this pandemic is that it can have a significant psychological effect on people.^[7] The researchers said that the mental health of the COVID-19 pandemic may be serious for peoples, those who are already vulnerable to biological or psychosocial stressors, those who have been in contact with the virus,

and health professionals.^[8] Exposure to the coronavirus, in addition to general symptoms, has some psychological effects. Mansourieh concluded that the level of anxiety about COVID-19 was higher among women, people who more followed corona-related news, and the age group of 21–40 years.^[9] Table 1 summarizes some general and psychological effects of exposure to the COVID-19. Due to the importance of the subject, the aim of this brief manuscript is an overview of the results of the articles conducted on the psychological effects of COVID-19 on different groups of people.

Methods

Search strategy

Although there have been researches conducted on clinical aspects of COVID-19, so far little research is available on its psychological effects,^[15] so a review of the published literature was performed in an electronic database (PubMed, Google Scholar, and Elsevier) and several different keywords were used to search for related articles about consequences of the COVID-19 in mental health such as "stress," "anxiety," "mental health," "depression," "mental disorders" and "psychological disorders." After searching in these databases, the references that were relevant to this article were selected and studied.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Zeeverdegani SK Influence of COVID-19 pandemic on the psychological condition and mental health of different types of population: A narrative review. *Int J Prev Med* 2022;13:71.

Address for correspondence:
Dr. Sara Karimi Zeeverdegani,
Department of Occupational Health Engineering, School of Health, Isfahan University of Medical Sciences, Isfahan, Iran.
E-mail: S_karimi@hlth.mui.ac.ir

Access this article online

Website:
www.ijpvmjournal.net/www.ijpvm.ir

DOI:
10.4103/ijpvm.IJPVM_301_20

Quick Response Code:



Table 1: Summary of the general and psychological effects of the coronavirus

Reference	Year	Results
Salari <i>et al.</i> ^[10]	2020	COVID-19 causes physical health concerns as well as some mental disorders.
Zandifar <i>et al.</i> ^[11]	2020	Among healthcare workers, 33.9%, 51.2%, and 41.7%, respectively, experienced degrees of stress, anxiety, and depression.
Wang <i>et al.</i> ^[12]	2020	Exposure to COVID-19 causes some common symptoms such as fever, coryza, cough, sore throat, headache, myalgia, dizziness, chills, fever, and breathing difficulty.
Shi <i>et al.</i> ^[13]	2020	Approximately one-quarter to one-third of people under review exhibited symptoms of anxiety, depression, acute stress, and insomnia, also people with occupational exposures reported greater symptoms of these disorders.
Carfi <i>et al.</i> ^[14]	2020	Common symptoms include fever, cough, dyspnea, musculoskeletal, and gastrointestinal symptoms

In general, there is little field research on this subject, and after deleting some unrelated articles, finally, 41 references were used in this study.

Results

There is a wide consensus that the COVID-19 not only affects physical health but also affects mental health,^[8] and long-term mental health impact of 2019-nCoV may take a long time for it to become fully apparent, therefore, controlling it requires the efforts of health systems.^[16] Many people can be affected by this pandemic, studies indicated a major mental health problem during the COVID19 pandemic, in people who spend too much time on the pandemic, healthcare workers, and also young people.^[17] In addition to efforts to prevent the spread of this disease, special attention is provided to the psychological aspects of people,^[18] therefore, in China, on January 27, 2020, the National Health Commission issued its first comprehensive guidelines for emergency psychological crisis intervention for people affected by COVID-19.^[15]

Healthcare workers

Healthcare professionals often have contracted the disease due to exposure to people with the coronavirus. Studies have been conducted in this field for various purposes.

The management of a hospital in China was careful regarding the mental health problems, and have performed some psychological protective measures.^[1] Some research was done with the aim of psychological intervention measures during this pandemic,^[19] and research about the mental health of medical workers during the spread of this virus.^[20]

Based on research to investigate the work stress among Chinese nurses in fighting COVID-19, 180 questionnaires were completed to assess stress and anxiety, results show that this group of nurses are under pressure.^[21]

Nakhostin-Ansari evaluated 323 medical students and concluded that the prevalence of mild to severe anxiety and depression during this pandemic was 38.1% and 27.6%, respectively.^[22] A survey of 125 hospital nurses revealed that the COVID-19 pandemic showed depression, anxiety,

and stress of nurses were moderate. Depression, anxiety, and stress prevalence were 51.1%, 48%, and 48%, respectively.^[23] One of the problem is sleep disorder, and different agents may have resulted in decreased sleep quality in the medical personnel. Sleep is affected by many factors, for clinical personnel, enough sleep helps them to work better and maintains optimal immune function to inhibit infection.^[24] Disruptions to sleep and hazards associated with occupational exposure to this virus may lead to stress, anxiety, burnout, physical and mental fatigue,^[25] so the mixture of stress, anxiety, and self-efficacy of medical personnel can affect their sleep state.^[24] In a study to investigate depression, stress and anxiety rate of physicians during the 2019- nCoV pandemic, 442 people were examined and result indicated that level of depression, anxiety and stress was 64.7%, 51.6%, and 41.2%, respectively.^[26]

Researchers showed that medical personnel who were treating patients with COVID-19 in China had experienced anxiety and stress that were dependent on their sleep quality.^[24] In general, these pandemics have resulted in new cases of anxiety and depression and an increase in mental health problems for healthcare workers.^[25]

Other people

In such cases, according to similar epidemics and pandemics, significant concerns may arise among patients, such as fear of death.^[18] Studies show an increased prevalence of depression in patients who experienced COVID-19 disease.^[27] The results of some research indicated that some emotional states, containing fear, anxiety, boredom, and social withdrawal, are the main effects that will be experienced in patients during COVID-19.^[6]

*The research was done among conscious COVID-19 patients, out of a total of 61 study subjects, 72.1% had a normal score of depression, and anxiety and stress were reported to have normal score among 75.4% of the patients.^[28] A case report study done by Rui Fu *et al.* on an 18-year-old male patient suspected with COVID-19 indicated sleeping poorly at night so results show that sleeping for only about 3 h at night, being nervous during*

the day.^[29] Verma et al. investigated depression, anxiety, and stress among the general Indian public during COVID-19, and results show that 25%, 28%, and 11.6%, of the participants, were moderate to extremely severely depressed, anxious, and stressed, respectively.^[30]

So far, little research has been done on the effects of COVID-19 on children. The results of some research indicated that children often have milder symptoms than adults; also in this group deaths have been extremely rare.^[31]

School closures and children staying at home may have adverse effects on the children's physical and mental health.^[31] Maintaining children's mental health during the COVID-19 pandemic is very important so mental health professionals should establish guidelines to deal with COVID-19 pandemic-related psychological problems in this group.^[32]

2019-nCoV pandemic has caused a worldwide public health crisis resulting in individual and societal anxiety and fear.^[7] One study examined that the parenting stress index (PSI) was used to measure parenting stress; in this research personal distress scores reported on the PSI-SF before and after school closures were 2.39 and 2.49, respectively, also parents' current personal distress levels were significantly higher than before the school closures had occurred ($t = 4.89, P < 0.01$).^[33] Generally, in quarantine conditions, because of losing social intervention and face-to-face connections, stressful conditions have formed.^[18] In particular, fear of the increased risk of exposure to this virus, and concerns about the infection of loved ones may cause a significant psychological strain.^[7] Other risks that can exist consist of suicide, social isolation, and loneliness contribute to suicide risk, so these are likely to increase particularly for the bereaved individual during the pandemic.^[34]

Stress and challenges can operate some psychological disorders, such as depression and anxiety,^[18] and researches show that when a major infectious disease occurred, levels of anxiety-related symptoms increase.^[17] In these pandemic conditions, concerns about one's health and that of their beloved ones and uncertainty about the future can lead to fear, depression, and anxiety.^[8] Researchers show poor sleep quality and a high prevalence of anxiety disorder in the Chinese people during the COVID19 pandemic,^[17] also showed more negative emotions and less positive emotions after the declaration of COVID-19.^[35] In one research, psychological distress among people in India during COVID-19 lockdown was assessed, samples consisted of students, teachers, researchers, mental health professionals, health professionals, and other groups. Results show that the mean values of stress, anxiety, and depression for males

were 12.65, 9.91, and 10.81, respectively, and for females, it was 13.44, 10.57, and 10.96, respectively.^[36] The research aimed to investigate anxiety, stress, and depression levels in the initial stage of the COVID-19 outbreak, 976 adults were examined

and, levels of symptoms were low at the start of the warning but younger people with chronic diseases reported more symptoms than others.^[37] Often sleep is difficult for anxious people and may wake up frequently during sleep^[24] so people's sleep quality during a pandemic may be affected and some study shows that anxiety is positively correlated with the stress burden.^[21] Finally, about the 2019-nCoV pandemic, it seems that there will be increases in depression, anxiety, domestic violence, and loneliness in individuals.^[38]

Conclusion

2019-nCoV is a novel disease and there is little knowledge about it so this epidemic has become a stressor. In addition to causing physical harm, this virus also affects mental health.^[17] Anxiety is a common negative effect encountered by medical personnel during this pandemic.^[24]

One of the biggest stressors is that the condition is unpredictable and there is uncertainty about when to control the disease.^[18] A significant adverse result of this pandemic is increased loneliness and social isolation which are associated with depression, anxiety, and suicidal attempts.^[39]

Some studies have suggested ways to reduce the psychological risk of this pandemic:

- About this pandemic, the WHO Department of Mental Health and Substance used a series of messages for healthcare workers, team leaders or managers in health facilities, the general population, careers of children, older adults, people with underlying health conditions and their careers, also messages for people in isolation^[40] so that the mentioned solutions are very useful for people.
- Access to appropriate personal protective equipment is important so Shanafelt says that there are eight sources of anxiety, one of which is access to appropriate personal protective equipment.^[3]
- Sharing the emotional load of this pandemic reduces emotional and mental problems.^[41]
- Some experiences and suggestions in some researchers about COVID-19 pandemic consist of sleep sufficiently, make time for exercise, entertainment, read a book, and daily routine activities.^[41]
- Some simple advice to decrease the risk of increasing mental health problems are, limit the sources of stress, keep your routine rhythm, and focus on the benefit of isolation.^[8]

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Received: 30 May 20 **Accepted:** 28 Oct 20

Published: 27 Apr 22

References

- Zhu Z, Xu S, Wang H, Liu Z, Wu J, Li G, *et al.* COVID-19 in Wuhan: Immediate psychological impact on 5062 health workers. *MedRxiv* 2020. doi: 10.1101/2020.02.20.20025338.
- Bialek S, Boundy E, Bowen V, Chow N, Cohn A, Dowling N, *et al.* Severe Outcomes Among Patients with Coronavirus Disease 2019 (COVID-19) — United States, February 12–March 16, 2020. *Morbidity and mortality weekly report.* 2020;69:343-6.
- Shanafelt T, Ripp J, Trockel M. Understanding and addressing sources of anxiety among health care professionals during the COVID-19 pandemic. *JAMA* 2020;323:2133-4.
- Curtis JR, Kross EK, Stapleton RD. The importance of addressing advance care planning and decisions about do-not-resuscitate orders during novel coronavirus 2019 (COVID-19). *JAMA* 2020;323:1771-2.
- Sim MR. The COVID-19 pandemic: Major risks to healthcare and other workers on the front line. *Occup Environ Med* 2020;77:281-282.
- Farhoudian A, Baldacchino A, Clark N, Gerra G, Ekhtiari H, Dom G, *et al.* COVID-19 and substance use disorders: Recommendations to a comprehensive healthcare response. An international society of addiction medicine practice and policy interest group position paper. *Basic Clin Neurosci* 2020;11:133-50.
- Tsamakis K, Triantafyllis AS, Tsiptsios D, Spartalis E, Mueller C, Tsamakis C, *et al.* COVID-19 related stress exacerbates common physical and mental pathologies and affects treatment (Review). *Exp Ther Med* 2020;20:159-62.
- Fiorillo A, Gorwood P. The consequences of the COVID-19 pandemic on mental health and implications for clinical practice. *Eur Psychiatry* 2020;63:e32.
- Moghanibashi-Mansourieh A. Assessing the anxiety level of Iranian general population during COVID-19 outbreak. *Asian J Psychiatr* 2020;51:102076.
- Salari N, Hosseini-Far A, Jalali R, Vaisi-Raygani A, Rasoulpoor S, Mohammadi M, *et al.* Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: A systematic review and meta-analysis. *Global Health* 2020;16:57.
- Zandifar A, Badrfam R, Mohammadian Khonsari N, Assareh M, Karim H, Azimzadeh M, *et al.* COVID-19 and medical staff's mental health in educational hospitals in Alborz Province, Iran. *Psychiatry Clin Neurosci* 2020. doi: 10.1111/pcn. 13098.
- Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, *et al.* Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *Int J Environ Res Public Health.* 2020;17:1729.
- Shi L, Lu ZA, Que JY, Huang XL, Liu L, Ran MS, *et al.* Prevalence of and risk factors associated with mental health symptoms among the general population in China during the coronavirus disease 2019 pandemic. *JAMA Netw Open* 2020;3:e2014053.
- Carfi A, Bernabei R, Landi F, Gemelli Against COVID-19 Post-Acute Care Study Group. Persistent symptoms in patients after acute COVID-19. *JAMA* 2020;324:603-5.
- Ho CS, Chee CY, Ho RC. Mental health strategies to combat the psychological impact of COVID-19 beyond paranoia and panic. *Ann Acad Med Singap* 2020;49:155-60.
- Rajkumar RP. COVID-19 and mental health: A review of the existing literature. *Asian J Psychiatr* 2020;52:102066.
- Huang Y, Zhao N. Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 outbreak in China: A web-based cross-sectional survey. *Psychiatry Res* 2020;288:112954.
- Zandifar A, Badrfam R. Iranian mental health during the COVID-19 epidemic. *Asian J Psychiatr* 2020;51:101990.
- Orrù G, Ciacchini R, Gemignani A, Conversano C. Psychological intervention measures during the covid-19 pandemic. *Clinical Neuropsychiatry* 2020;17:76-9.
- Rana W, Mukhtar S, Mukhtar S. Mental health of medical workers in Pakistan during the pandemic COVID-19 outbreak. *Asian J Psychiatr* 2020;51:102080.
- Mo Y, Deng L, Zhang L, Lang Q, Liao C, Wang N, *et al.* Work stress among Chinese nurses to support Wuhan in fighting against COVID-19 epidemic. *J Nurs Manag* 2020;28:1002-9.
- Nakhostin-Ansari A, Sherafati A, Aghajani F, Khonji MS, Aghajani R, Shahmansouri N. Depression and anxiety among Iranian medical students during COVID-19 pandemic. *Iran J Psychiatry* 2020;15:228-35.
- Abadi TSH, Askari M, Miri K, Nia MN. Depression, stress and anxiety of nurses in COVID-19 pandemic in NoheDey Hospital in Torbat-e-Heydariyeh city, Iran. *Journal of Military Medicine* 2020;22:526-33.
- Xiao H, Zhang Y, Kong D, Li S, Yang N. The effects of social support on sleep quality of medical staff treating patients with coronavirus disease 2019 (COVID-19) in January and February 2020 in China. *Med Sci Monit* 2020;26:e923549.
- Sasangohar F, Jones SL, Masud FN, Vahidy FS, Kash BA. Provider burnout and fatigue during the COVID-19 pandemic: Lessons learned from a high-volume intensive care unit. *Anesth Analg* 2020;131:106-11.
- Elbay RY, Kurtuluş A, Arpacioğlu S, Karadere E. Depression, anxiety, stress levels of physicians and associated factors in Covid-19 pandemics. *Psychiatry Res* 2020;290:113130.
- Zhang J, Lu H, Zeng H, Zhang S, Du Q, Jiang T, Du B. The differential psychological distress of populations affected by the COVID-19 pandemic. *Brain Behav Immun* 2020;87:49-50.
- Shahid R, Raheel Raza M, Umar M, Zeb S, Shehryar M, Ambreen S, *et al.* Assessment of depression, anxiety and stress among COVID-19 patients by using DASS 21 scales. *J Med Case Rep Rev* 2020;3. doi: 10.15520/jmcr.v3i06.189.
- Rui Fu, Zhang Y. Case report of a patient with suspected COVID-19 with depression and fever in an epidemic stress environment. *Gen Psychiatr* 2020;33:e100218.
- Shankey Verma, Mishra A. Depression, anxiety, and stress and sociodemographic correlates among general Indian public during COVID-19. *Int J Soc Psychiatry* 2020;66:756-62.
- Ludvigsson JF. Systematic review of COVID-19 in children shows milder cases and a better prognosis than adults. *Acta Paediatr* 2020;109:1088-95.
- Liu JJ, Bao Y, Huang X, Shi J, Lu L. Mental health considerations for children quarantined because of COVID-19. *Lancet Child Adolesc Health* 2020;4:347-9.
- Hiraoka D, Tomoda A. Relationship between parenting stress and

- school closures due to the COVID-19 pandemic. *Psychiatry Clin Neurosci* 2020. doi: 10.1111/pcn.13088.
34. Gunnell D, Appleby L, Arensman E, Hawton K, John A, Kapur N, *et al.* Suicide risk and prevention during the COVID-19 pandemic. *Lancet Psychiatry* 2020;7:468-71.
 35. Li S, Wang Y, Xue J, Zhao N, Zhu T. The impact of COVID-19 epidemic declaration on psychological consequences: A study on active Weibo users. *Int J Environ Res Public Health* 2020;17:2032.
 36. Rehman U, Shahnawaz MG, Khan NH, Kharshiing KD, Khursheed M, Gupta K, *et al.* Depression, anxiety and stress among Indians in times of Covid-19 lockdown. *Community Ment Health J* 2020;1-7. doi: 10.1007/s10597-020-00664-x.
 37. Ozamiz-Etxebarria N, Dosil-Santamaria M, Picaza-Gorrochategui M, Idoiaga-Mondragon N. Stress, anxiety, and depression levels in the initial stage of the COVID-19 outbreak in a population sample in the northern Spain. *Cad Saude Publica* 2020;36:e00054020.
 38. Galea S, Merchant RM, Lurie N. The mental health consequences of COVID-19 and physical distancing: The need for prevention and early intervention. *JAMA Intern Med* 2020;180:817-8.
 39. Holmes EA, O'Connor RC, Perry VH, Tracey I, Wessely S, Arseneault L, *et al.* Multidisciplinary research priorities for the COVID-19 pandemic: A call for action for mental health science. *Lancet Psychiatry* 2020;7:547-60.
 40. Mental health and psychosocial considerations during the COVID-19 outbreak World Health Organization (WHO); 2020. Available from: WHO/2019-nCoV/MentalHealth/2020.1.
 41. Alikhani R, Salimi A, Hormati A, Aminnejad R. Mental health advice for frontline healthcare providers caring for patients with COVID-19. *Can J Anaesth* 2020;67:1068-9.