WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 10, Issue 3, 49-55. Review Article ISSN 2277– 7105

COVID-19 PANDEMIC IMPACT ON THE MENTAL HEALTH OF PATIENTS AND THE HEALTH CARE PROFESSIONALS

Dorota Lesiak*

The Poznań University of Economics and Business.

Article Received on
04 Jan. 2021,

Revised on 24 Jan. 2021,
Accepted on 14 Feb. 2021

DOI: https://doi.org/10.17605/OSF.IO/QYEZH

***Corresponding Author**
Dorota Lesiak
The Poznań University of Economics and Business.

ABSTRACT

The COVID-19 pandemic emerged in Wuhan, China in December 2019 resulting in a real global challenging health crisis. From early days of the pandemic, there were concerns regarding the pandemic impact on the human health including the mental health .This paper presents a review for some existing literature related to the impact of COVID-19 infection pandemic on the emotional and mental health of the newly diagnosed and patients with pre-existing mental disorders. The review included 8 papers, the findings demonstrate that the COVID-19 pandemic has resulted in a significant impact on the mental well being of the affected populations.

KEYWORDS: COVID-19, SARS, MERS, Anxiety, Depression, Insomina, Breast cancer.

Pathophysiology

Many of the psychological illnesses, has been reported to be associated with different genetic, infectious and environmental factors. Some papers published in the late 20th century, revealed that antenatal influenza infection results in increased the risk of psychosis in offspring.[1] Respiratory tract viral infection can attack all body systems including the CNS(Central nervous system), precipitating a variety of neurological and psychiatric manifestations.[2] The novel Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) caused the coronavirus Disease 2019 (COVID-19), and it was emerged in Wuhan, China in December 2019 leading to a worldwide pandemic.

This coronavirus name is originated from Latin (corona = crown), it refers to the shape of the protein crown-like spikes found on the enveloped surface of the virus (Fig.1).

The intermediate host of the SARS-CoV2 (COVID-19) virus is believed to be the Malayan pangolins (Manis javanica) which are ant-eating, where this animals get infected by the virus from bats. The main route of transmission is via the respiratory droplets, also can be transmitted through the direct contact even form asymptomatic people. SARS-CoV-2 enters the pneumocytes in the respiratory tract via angiotensin converting enzyme 2 receptors, replicating inside them and causing cellular damage, also the virus is known to be neurotropic and has the ability to enter the CNS via the olfactory bulb neurons using the same ACE receptors also, this mechanism requires proteolytic action of the virus spike protein (S) in addition to the action of transmembrane protease serine 2 (TMPRSS2) for efficient entry to the cell (Fig.1).[2,3]

Common presentation Symptoms and Diagnosis

The most frequent encountered symptoms are fever, dry cough, fatigue and dyspnoea. The diagnosis is confirmed by real-time reverse-transcriptase-polymerase chain-reaction (rRT-PCR) assay in addition to HRCT (High resolution CT scan) of the chest.[3] The patients may experience a spectrum of neurological symptoms, as headache, altered consciousness, impaired cognition, and sensory alteration. A such features have been reported in up to 36% of the COVID-19 positive patients.[4]

COVID-19 and Mental manifestations

Some analysed data estimated a higher rates of psychiatric illnesses following the SARS (Severe Acute Respiratory Syndrome) and MERS (Middle East Respiratory Syndrome) outbreaks, also the recent reports suggested that infections caused by coronavirus are associated with depression, delirium, manic symptoms, anxiety, insomnia, emotional distress, social isolation stress and poor memory. COVID-19 infection, follows the pervious coronaviruses family is affecting the patients mental health, either by triggering the onset of a new mental disorder or aggravating pre-existing mental health condition. The most common encountered acute psychiatric symptom associated with COVID-19 infection was delirium, which could be the COVID-19 presenting symptom in the older age group as well as in patients with dementia.[2,5] COVID-19 patients who had delirium during the hospital admission are associated with unfavourable outcomes, in particular if they require intensive care unit admission.[6]

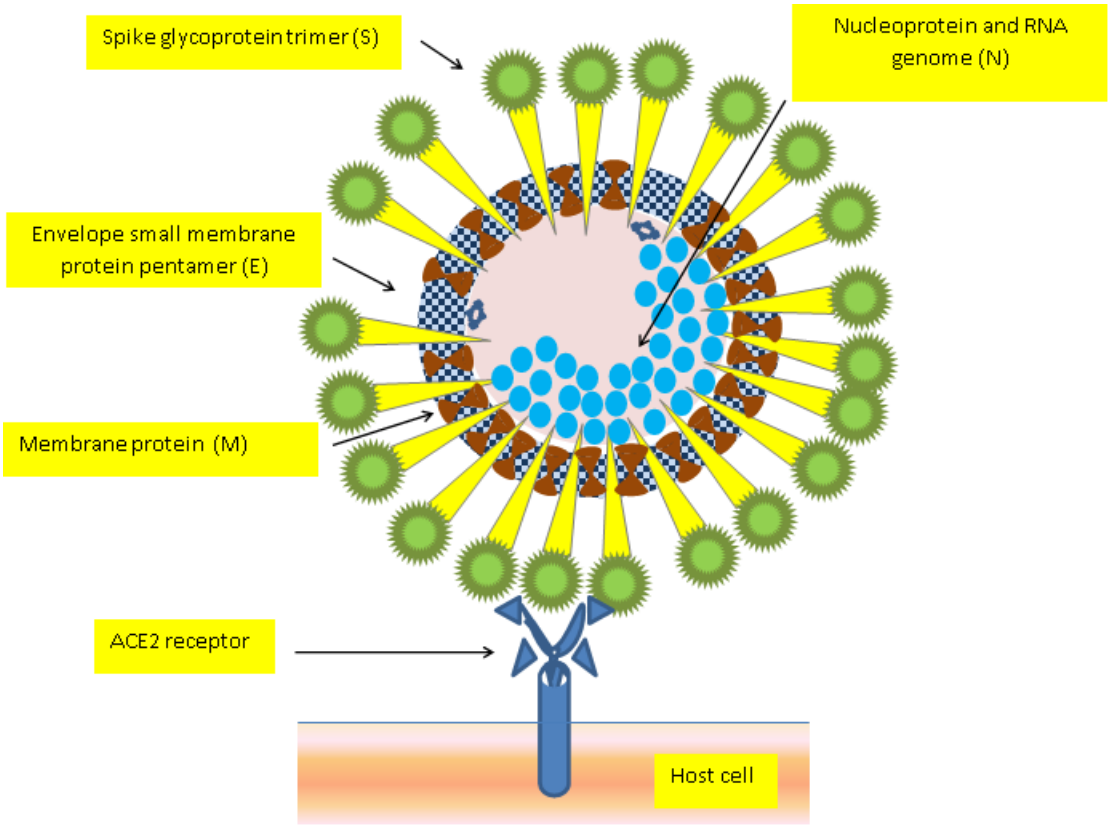

Figure 1: Structure of the COVID-19 virus, showing the different surface and deep proteins with ACE2 receptor on the host cell surface.[3]

Anxiety, depression, psychosis and catatonia also has been observed in COVID-19 patients (Table.1). After classifying the anxiety disorders into subtypes, adjustment disorder, generalised anxiety illness, and, to a lesser extent, PTSD (posttraumatic stress disorder) in addition to panic disorder were the most frequent detected stress disturbances.[7] One of the reports stated that, during the first 2-12 weeks post COVID-19 infection, an increased the rate of newly diagnosed cases of psychiatric illnesses has been noticed in individuals who has no pervious psychiatric history.[7] On the contrary, Pan et al, in 2020, presented a paper looked at a cohort of 1181, they found that people with anxiety, depressive, or obsessive-compulsive disorders didn't report a greater increase in symptoms during the pandemic compared with their pre-COVID-19 pandemic levels.[8] However the symptom severity of people with compulsive disorders has more sever symptoms than the group of patients without previous mental health disorders.[8] The fear of encountering the infection, getting admitted to the hospital with sever illness, lack of successful treatment, lockdown, quarantine policy and social isolation is a contributory factors to trigger the psychological symptoms in the patients who had no previous mental health history as well as exacerbation of the current mental illness and , this is applied to general population and not necessarily to COVID-19 patients

only. Female gender, younger age group, having lower educational attainment, belonging to lower income class, job loss, pre-existing mental health disorder, and living alone or with young children or living with a person with a special needs, all these factors are associated with the risk of higher levels of anxiety and depression during the pandemic, in particular with the lockdown. There also other factors which has the same effect as pre-existing chronic medical condition as cardiovascular diseases, diabetes mellitus, chronic obstructive airway disease, current treatment with immune-suppressive drugs or chemotherapy as well as pre-existing or newly diagnosed cancer. Some of the cancer patients may have their treatment altered by COVID-19 pandemic implemented policy. This is seen in the case of newly diagnosed breast cancers which is the commonest malignancy in UK, the standard treatment of this malignancy either surgery or chemotherapy in addition to radiotherapy and hormonal blockade. However, because of the pandemic, some cancer surgery are deferred and the patient will receive a hormonal blockade and their surgery will be re-scheduled for a later date, those patients will have a fear of being undertreated.[3,9,10] Another group of patients who routinely will be offered an immediate breast reconstruction after cancer surgery, will be scheduled for a delayed reconstruction. These patients will be stressed about their body image and will not accept the fact that, an important part of their body is missing. Frontline health care professionals and workers, also, reported different degrees of all range of mental health symptoms during the pandemic, one of the contributory factors is the stressful working conditions with fear of encountering the disease at the work place (Table.2).

CONCLUSION

The current evidence is showing the worldwide COVID-19 pandemic has resulted in a significant impact on the mental health of affected populations, this included infected as well as non-infected persons. Prompt mental health support should therefore be offered to the affected as well as the vulnerable group of COVID-19 patients, and also to provide the proper care to the frontline health care workers to protect them from the future negative impact of the pandemic.

Table 1: Estimated incidence of first psychiatric diagnoses after COVID-19 diagnosis.[7,11,12]

	Taquet 2020 n=57 476	Paz 2020 n= 306	Zhang 2020 n=57
	Incidence		
Psychiatric illness	5.8%	-	-
Mood disorder	0.1%	22.9%	29.2%
Anxiety disorder	4.7%	24.4%	20.8%
Insomnia	1.9%	-	-

Table 2: Estimated incidence of psychological impact on health care workers during COVID-19 pandemic.[13-15]

	Lai 2020 n=1257	Shechter 2020 n= 657	Xiang [16] 2020 n=57	Rossi 2020 n=1379
	Incidence % (n)			
Psychiatric illness				
Depression	50.4% (634)	48% (---)	29.2%	24.73% (341)
Anxiety disorder	44.6% (560)	33%	20.8%	19.80% (273)
Insomnia	34% (427)	43%	34%	8.27% (114)
Stress	71.5% (899)	57		21.90% (302)
PTSS*				49.48% (681)

*Post traumatic stress syndrome

REFERENCES

1. A. P. Kępińska, C. O. Iyegbe, A. C. Vernon, R. Yolken, R. M. Murray, and T. A. Pollak, "Schizophrenia and Influenza at the Centenary of the 1918-1919 Spanish Influenza Pandemic: Mechanisms of Psychosis Risk," (in eng), *Front Psychiatry,* 2020; 11: 72. doi: 10.3389/fpsyt.2020.00072.
2. M. Butler, T. A. Pollak, A. G. Rooney, B. D. Michael, and T. R. Nicholson, "Neuropsychiatric complications of covid-19," *BMJ,* 2020; 371: 3871. doi: 10.1136/bmj.m3871.
3. A. Saad Abdalla Al-Zawi *et al.*, "The Challenge of COVID-19: The Biological Characteristics and Outcomes in a Series of 130 Breast Cancer Patients Operated on During the Pandemic," (in eng), *Chirurgia (Bucur),* 2020; 115(4): 458-468, Jul-Aug 2020, doi: 10.21614/chirurgia.115.4.458.

4. N. Ahmadirad and Z. Ghasemi, "COVID-19 and Central Nervous System: Entry Routes And," (in eng), *Basic and clinical neuroscience,* 2020; 11(2): 217-224. Mar-Apr doi: 10.32598/bcn.11.covid19.2360.1.
5. T. E. Poloni *et al.*, "Prevalence and prognostic value of Delirium as the initial presentation of COVID-19 in the elderly with dementia: An Italian retrospective study," *EClinicalMedicine,* 2020; 26. doi: 10.1016/j.eclinm.2020.100490.
6. B. C. McLoughlin *et al.*, "Functional and cognitive outcomes after COVID-19 delirium," (in eng), *European geriatric medicine,* 2020; 11(5): 857-862. /10// 2020, doi: 10.1007/s41999-020-00353-8.
7. M. Taquet, S. Luciano, J. R. Geddes, and P. J. Harrison, "Bidirectional associations between COVID-19 and psychiatric disorder: retrospective cohort studies of 62 354 COVID-19 cases in the USA," *The Lancet Psychiatry,* 2021; 8(2): 130-140. doi: 10.1016/S2215-0366(20)30462-4.
8. K.-Y. Pan *et al.*, "The mental health impact of the COVID-19 pandemic on people with and without depressive, anxiety, or obsessive-compulsive disorders: a longitudinal study of three Dutch case-control cohorts," *The Lancet Psychiatry,* 2021; 8(2): 121-129. doi: 10.1016/S2215-0366(20)30491-0.
9. A. Saad Abdalla Al-Zawi, "Ki67 proliferative index as a predictive tool for axillary pathological complete response in node-positive breast cancer " *International Journal of Medical science,* 2020; 7: 11, doi: doi:10.14445/23939117/IJMS-V7I11P101.
10. A. Saad Abdalla Al-Zawi and A. Syed, "Ki67 Proliferation index as a prognostic and predictive tool for pathological response after upfront chemotherapy in breast cancer," *Paripex indian Journal of Reserach,* Original research, 2020; 9: 11. doi: DOI : 10.36106/paripex.
11. J. Zhang *et al.*, "The differential psychological distress of populations affected by the COVID-19 pandemic," (in eng), *Brain, behavior, and immunity,* 2020; 87: 49-50. doi: 10.1016/j.bbi.2020.04.031.
12. C. Paz *et al.*, "Anxiety and depression in patients with confirmed and suspected COVID-19 in Ecuador," (in eng), *Psychiatry and clinical neurosciences,* 2020; 74(10): 554-555. doi: 10.1111/pcn.13106.
13. A. Shechter *et al.*, "Psychological distress, coping behaviors, and preferences for support among New York healthcare workers during the COVID-19 pandemic," (in eng), *Gen Hosp Psychiatry,* 2020; 66: 1-8. Sep-Oct doi: 10.1016/j.genhosppsych.2020.06.007.

14. J. Lai *et al.*, "Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019," *JAMA Network Open*, 2020; 3(3): e203976-e203976, doi: 10.1001/jamanetworkopen.2020.3976.
15. R. Rossi *et al.*, "Mental Health Outcomes Among Frontline and Second-Line Health Care Workers During the Coronavirus Disease 2019 (COVID-19) Pandemic in Italy," (in eng), *JAMA network open*, 2020; 3(5): e2010185-e2010185. doi: 10.1001/jamanetworkopen.2020.10185.
16. Y.-T. Xiang, Y. Jin, and T. Cheung, "Joint International Collaboration to Combat Mental Health Challenges During the Coronavirus Disease 2019 Pandemic," *JAMA Psychiatry*, 2020; 77(10): 989-990, doi: 10.1001/jamapsychiatry.2020.105.