

In Hospital Mental Problems of COVID-19 Admitted Patients: a Narrative Review

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Abstract:

Background and objective: COVID-19 originated from China and quickly spread to several other countries. The objective of this study was to investigate in-hospital mental problems associated with the COVID-19.

Method: This was a narrative review through the literature of the COVID-19.

Results: The spread of COVID-19 raises significant problems for healthcare services especially hospitals that are at the frontline of each epidemic peak of the disease. Whenever number of COVID-19 infected patients increases, the hospitals are in the first place in charge of the fighting against disease. So, patients, their families, people working in the hospitals, are all under the mental pressures of the COVID-19. The worldwide perception of lack of transparency of the official information sources in different countries was causing the worldwide people to suffer an unprecedented outbreak of fear, panic, and anxiety toward COVID-19. The consequence of this issue is mental disorders for all people, COVID-19 hospitalized and quarantined patients. In this review, we evaluated the mental disorders in patients with acute COVID-19 who are hospitalized.

Conclusion: Our findings show that sleep disturbances due to increased levels of anxiety may be a predisposing factor for further mental condition in COVID-19 patients who are hospitalized. On the other hand, major mental problems like schizophrenia were not frequent; but, delirium in the elderly was common and a very poor prognostic factor in COVID-19 mortality.

Keywords: COVID-19, mental illness, hospitalized, delirium, schizophrenia

Background and objective:

Although understanding of the acute phase of the disease has grown exponentially, the effects of COVID-19 after therapeutic remission are little understood. Given the global situation of COVID-19 pandemic, which affects almost all important economic, political, social, and even military aspects of all countries of the world, and in other words, has paralyzed those countries, the psychological effects of this viral disease on mental health of people at different levels of society are very important¹. Health care workers, families, children, students, mentally ill people, and even staff in different occupations may sense the fear and anxiety of COVID-19 in different ways²⁻⁴.

If left unchecked, the patient may experience permanent damage such as intrusive memories⁵, avoidance behaviors⁶, irritability, and emotional numbness⁷, and post-traumatic stress disorder. It is a stress-related psychological problem that occurs in people who experience a life-threatening condition.

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Trauma is another problem for people with COVID-19 that may occur in isolated or quarantined wards. The results of a study in China during the COVID-19 in Wuhan show that the sleep quality index in these patients decreases sharply⁷. Anxiety and depression are other important psychological disorders that can damage the mental health of patients with COVID-19⁸.

Before the onset of COVID-19, the most common mental illness was depressive disorders, but after the outbreak of COVID-19, anxiety disorders have become one of the most obvious psychological problems among people. Fear of COVID-19 and the resulting death has caused severe anxiety in people. Symptoms of the disease are also more common in people with COVID-19 who are in quarantine or have recovered and are concerned about re-infection⁹. A panic attack is a sudden onset of fear that triggers physical reactions in the body. It is accompanied by symptoms such as palpitations, sweating, shortness of breath and tightness in the chest, numbness, and tingling in the limbs. These symptoms are so widespread that people think they have had a heart attack and are afraid of dying. Although the patient himself thinks that death or bodily harm is imminent, a panic attack does not cause physical complications such as death or heart attack. In addition to anxiety disorders, obsessive-compulsive disorder, and depression, depression is very common in quarantined patients¹⁰. Restrictions and declining social relationships in people are also among the causes of depressive disorder in the COVID-19 crisis. Worthlessness, lack of motivation for life, and suicidal thoughts may increase in these people¹¹.

Given the current emergency of this disease, it is predictable that some of the symptoms of psychological disorders will occur in patients with COVID-19. In this regard, reviewing the results of several studies conducted on patients with COVID-19. Some of these psychological disorders including anxiety, fear, depression, emotional changes, insomnia, and post-traumatic

stress disorder (PTSD) are reported with a high prevalence in these patients. Therefore, in the current high-risk situation, identifying people prone to psychological disorders are important¹². Different societies whose mental health may be endangered have been necessary to maintain the mental health of these people with appropriate psychological strategies and techniques.

While many studies have evaluated mental disorders in COVID-19 survivors; the scope of this study is about the mental disorders in patients with acute COVID-19 who are hospitalized. Also, other people in hospitals including physicians, nurses, and other workers of hospitals are at risk of these mental problems.

Chronic fatigue syndrome and sleep disturbances:

Severe lung injuries in patients recovering from COVID-19 who have been hospitalized for a long time can still be seen weeks after discharge from the hospital. The destructive effects of the coronavirus on the physical health of individuals have caused concern in the scientific community. We see that even people with mild COVID-19 continue to suffer from severe complications for weeks or even months after recovery and discharge from the hospital. The length of the recovery period and the time required for these people to return to normal life before the illness is a concern. Research on the clinical signs of COVID-19 also shows two symptoms, including fatigue and weakness and mental disorders, even after recovery¹³. Fatigue is widespread among those recovering from COVID-19. Chronic fatigue syndrome is also one of the most common complaints that sufferers often complain about¹³.

Alnofaiey et al. assessed the prevalence and associated causes of sleep disorders during the COVID-19 epidemic among Saudi physicians working in a hospital center of COVID-19¹⁴. In the age range of thirty-forty years, the prevalence of sleep disorders was 43.9 percent.

In adults with COVID-19, owing to high infectiousness, all identified cases have to be treated in isolation. Anxiety and sleep disorders improved dramatically after isolation therapy, based on the clinical observation. There may be respiratory depression with plenty of sleep-promoting medications, and the current COVID-19 predominantly affects lung tissue, and the use of drugs may raise the possibility of respiratory depression¹⁵.

In contrast with all of those cases who had suffered just moderate respiratory symptoms and did not require ICU care, the sleep of cases who had suffered the most serious respiratory symptoms and who required sustained ICU care displayed lower sleep efficiency and immobility time and higher fragmentation index¹⁶. Evidence for the psychiatric concerns of individuals with COVID-19 was minimal. A cross-sectional analysis of the mental distress and quality of sleep of patients in a single center in Wuhan was published by Jiang et al.¹⁷. Based on another study in COVID-19 patients, sex, age, level of education, frequency of family communications, subjective level of awareness of COVID 19, and attitude assessment of medical personnel are correlated with the Self-Rating Depression Scale score of the respondents. Age and subjective assessment of disease symptoms are variables correlated with the Pittsburgh Sleep Quality Index score¹⁸.

Major psychological disorders and COVID-19

Increased anxiety, depression, and insomnia are some of the concerns that hospitalized people with COVID-19 may experience. While researchers have found no clear signs of psychotic disorders such as schizophrenia in patients with COVID-19 who have been hospitalized for long time, but noted that patients with this type of mental illness were more likely to relapse if they get infected with COVID-19¹⁹.

Patients with COVID-19 may experience delirium in the acute phase of the disease and develop depression and anxiety in the long term.

Viral infections are common, and some of them cause neuropsychiatric syndrome in the cognitive, emotional, behavioral, and perceptual domains. Statistics on patients with severe disease who were admitted to the intensive care unit show that the symptoms of confusion, anxiety and memory impairment are much higher among patients. Although COVID-19 infection follows a pattern similar to that of SARS and MERS viruses, most patients recover without mental health problems. COVID-19 can cause delirium only in very acute conditions, mostly in patients with underlying psychiatric problems who are hospitalized²⁰.

In individuals aged 50 years and over with COVID-19, delirium appeared to be directly related to in-hospital death. Given health care challenges throughout the pandemic, physicians can periodically track delirium while evaluating the incidence and prognosis in patients with COVID-19. Ticinesi et al. tried to identify the medical associations and assess the link with mortality to identify the epidemiology of delirium in patients treated for confirmed COVID-19 during the outbreak in Italy. Delirium was a frequent complication of COVID-19 and a sign of the course of serious illness, especially in elderly cases with neuropsychiatric comorbid conditions²¹. Delirium is a common disorder that typically has a poor prognosis in admitted elderly patients. A strong impact on the central nervous system of SARS-COV-2 has been speculated. Delirium is frequent and closely correlated with in-hospital fatalities in elderly individuals with COVID-19. Delirium in older adults must be viewed as a troubling prognostic sign²². Schizophrenia is not common in COVID-19 patients and all Schizophrenia cases are discussed in limited case report studies²³.

In a study by Halpin et al., survivors were evaluated for the long-term symptoms and effects of COVID-19, and researchers confirmed that there is a need for post-COVID-19 recovery plans. Although only seven months have passed since the new Coronavirus, and we still do not

know what the negative effects will be in the long run, this new study shows that COVID-19 patients do not "completely" return to their normal past. Feeling tired is a complication that has been mentioned more in this study than any other complication. "New shortness of breath or intensified shortness of breath" has been a noticeable symptom in those who have recovered, even weeks after recovery. About half of COVID-19 patients experienced psychological symptoms, including post-traumatic stress disorder, after recovery and being discharged from the hospital. Evidence suggests that the recovery period from COVID-19 may take months for some people, and it is important that those recovering from the coronavirus are not left untreated and checked frequently on schedule²⁴.

Chang et al. investigated the prevalence of post-traumatic stress disorder (PTSD) among patients with COVID-19 who were treated and discharged from the hospital. In their study, they conducted telephone interviews with the participants and evaluated the presence of PTSD using the Post-Traumatic Stress Disorder Checklist-5 (PCL-5). No significant differences were observed in demographic characteristics, including, sex, age, hospitalization time, and duration after discharge, between patients with PTSD and those without PTSD²⁵.

Rovere et al. set up a multidisciplinary COVID-19 follow-up outpatient clinic to identify and address the clinical needs of COVID-19 survivors. In their study, characteristics related to the symptoms and severity of the disease in the case group are similar to all patients and the case group is representative of all patients in terms of disease-related characteristics²⁶.

There are some variations in the mortality rates and range of transmission rates

between COVID-19 and SARS; Tzeng et al. conducted a study with the purpose of examination as to whether SARS is associated with the risk of psychiatric disorders and suicide. At the end they concluded, SARS is associated with the increased risk of psychiatric disorders and suicide²⁷.

There is insufficient evidence of correlations between psychiatric illness and the risk of a favorable outcome of the test for SARS-CoV-2 and the clinical effects of COVID-19. Lee et al., studied the investigate these associations. In their study, mental disorder diagnosis was not associated with an elevated risk of testing positive for SARS-CoV-2²⁸.

In order to preserve the function of the hospital, it is necessary to avoid the spread of COVID-19 infection within the hospital environment, and therefore different steps have been taken to achieve this purpose. In fact, many hospitals have limited visits to hospitals by members of their families and personal friends. Kandori et al., study aimed to identify the association between total visitation restriction because of COVID-19 pandemic and the incidence of delirium for hospitalized inpatients. Finally, they concluded visitation restriction is associated with an increased incidence of delirium in those patients²⁹.

Possible Interventions:

Current efforts for psychological interventions should be scheduled for patients who are hospitalized or are quarantined at home for COVID-19. 24-hour support by telephone, Internet, etc. is required to achieve effective psychological measures. the telemedicine approach mentioned above is necessary and at the same time minimizes the risks of further infection transmission in an epidemic

situation^{30,31}. However, there are significant drawbacks to remote psychological counseling because it lacks effective medical history data, psychometric data, body language, and continuous observation, and such interventions should only be used in exceptional circumstances such as the current prevalence of COVID-19 as emergency support³².

Conclusion:

Sleep disturbances due to increased level of anxiety may be a predisposing factor for the further mental condition in COVID-19 patients. On the other hand, major mental problems like schizophrenia were not frequent; but, delirium in the elderly was common and a very poor prognostic factor in COVID-19 mortality.

Competing Interests

The authors declare no competing interests

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References:

1. Tanoue Y, Nomura S, Yoneoka D, Kawashima T, Eguchi A, Shi S, Harada N, Miyata H. Mental health of family, friends, and co-workers of COVID-19 patients in Japan. *Psychiatry Research*. 2020 Sep 1;291:113067.
2. Vindegaard N, Benros ME. COVID-19 pandemic and mental health consequences: Systematic review of the current evidence. *Brain, behavior, and immunity*. 2020 Oct 1;89:531-42.
3. Druss BG. Addressing the COVID-19 pandemic in populations with serious mental illness. *JAMA psychiatry*. 2020 Sep 1;77(9):891-2.
4. Hotopf M, Bullmore E, O'Connor RC, Holmes EA. The scope of mental health research during the COVID-19 pandemic and its aftermath. *The British Journal of Psychiatry*. 2020 Oct;217(4):540-2.
5. Sun L, Sun Z, Wu L, Zhu Z, Zhang F, Shang Z, Jia Y, Gu J, Zhou Y, Wang Y, Liu N. Prevalence and risk factors of acute posttraumatic stress symptoms during the COVID-19 outbreak in Wuhan, China. *MedRxiv*. 2020 Jan 1.
6. Pattison N. End-of-life decisions and care in the midst of a global coronavirus (COVID-19) pandemic. *Intensive & critical care nursing*. 2020 Jun;58:102862.
7. Jiang Z, Zhu P, Wang L, Hu Y, Pang M, Ma S, Tang X. Psychological distress and sleep quality of COVID-19 patients in Wuhan, a lockdown city as the epicenter of COVID-19. *Journal of Psychiatric Research*. 2020 Oct 27.
8. Mazza MG, De Lorenzo R, Conte C, Poletti S, Vai B, Bollettini I, Melloni EM, Furlan R, Ciceri F, Rovere-Querini P, Benedetti F. Anxiety and depression in COVID-19 survivors: Role of inflammatory and clinical predictors. *Brain, behavior, and immunity*. 2020 Oct 1;89:594-600.
9. Talevi D, Socci V, Carai M, Carnaghi G, Faleri S, Trebbi E, di Bernardo A, Capelli F, Pacitti F. Mental health outcomes of the CoViD-19 pandemic. *Rivista di psichiatria*. 2020 May 1;55(3):137-44.
10. Jung SJ, Jun JY. Mental health and psychological intervention amid COVID-19 outbreak: perspectives from South Korea. *Yonsei medical journal*. 2020 Apr 1;61(4):271.
11. Zhang WR, Wang K, Yin L, Zhao WF, Xue Q, Peng M, Min BQ, Tian Q, Leng HX, Du JL, Chang H. Mental health and psychosocial problems of medical health workers during the COVID-19 epidemic in China. *Psychotherapy and psychosomatics*. 2020;89(4):242-50.
12. Asim M, van Teijlingen E, Sathian B. Coronavirus Disease (COVID-19) and the risk of Post-Traumatic Stress Disorder: A mental health concern in Nepal. *Nepal*

- Journal of Epidemiology. 2020 Jun;10(2):841.
13. Menni C, Valdes AM, Freidin MB, Sudre CH, Nguyen LH, Drew DA, Ganesh S, Varsavsky T, Cardoso MJ, Moustafa JS, Visconti A. Real-time tracking of self-reported symptoms to predict potential COVID-19. *Nature medicine*. 2020 Jul;26(7):1037-40.
 14. Alnofaiey YH, Alshehri HA, Alosaimi MM, Alswat SH, Alswat RH, Alhulayfi RM, Alghamdi MA, Alsubaie RM. Sleep disturbances among physicians during COVID-19 pandemic. *BMC research notes*. 2020 Dec;13(1):1-7.
 15. Liu K, Chen Y, Wu D, Lin R, Wang Z, Pan L. Effects of progressive muscle relaxation on anxiety and sleep quality in patients with COVID-19. *Complementary Therapies in Clinical Practice*. 2020 May 1;39:101132.
 16. Vitale JA, Perazzo P, Silingardi M, Biffi M, Banfi G, Negrini F. Is disruption of sleep quality a consequence of severe Covid-19 infection? A case-series examination. *Chronobiology international*. 2020 Jul 2;37(7):1110-4.
 17. Jiang Z, Zhu P, Wang L, Hu Y, Pang M, Ma S, Tang X. Psychological distress and sleep quality of COVID-19 patients in Wuhan, a lockdown city as the epicenter of COVID-19. *Journal of Psychiatric Research*. 2020 Oct 27.
 18. Mazza MG, De Lorenzo R, Conte C, Poletti S, Vai B, Bollettini I, Melloni EM, Furlan R, Ciceri F, Rovere-Querini P, Benedetti F. Anxiety and depression in COVID-19 survivors: Role of inflammatory and clinical predictors. *Brain, behavior, and immunity*. 2020 Oct 1;89:594-600.
 19. Alonso-Lana S, Marquié M, Ruiz A, Boada M. Cognitive and neuropsychiatric manifestations of COVID-19 and effects on elderly individuals with dementia. *Frontiers in aging neuroscience*. 2020;12.
 20. Garcez FB, Aliberti MJ, Poco PC, Hiratsuka M, Takahashi SD, Coelho VA, Salotto DB, Moreira ML, Jacob-Filho W, Avelino-Silva TJ. Delirium and adverse outcomes in hospitalized patients with COVID-19. *Journal of the American Geriatrics Society*. 2020 Nov;68(11):2440-6.
 21. Ticinesi A, Cerundolo N, Parise A, Nouvenne A, Prati B, Guerra A, Lauretani F, Maggio M, Meschi T. Delirium in COVID-19: epidemiology and clinical correlations in a large group of patients admitted to an academic hospital. *Aging clinical and experimental research*. 2020 Oct;32(10):2159-66.
 22. Marengoni A, Zucchelli A, Grande G, Fratiglioni L, Rizzuto D. The impact of delirium on outcomes for older adults hospitalised with COVID-19. *Age and ageing*. 2020 Nov;49(6):923-6.
 23. Palomar-Ciria N, Del Valle PB, Hernández-Las Heras MÁ, Martínez-Gallardo R. Schizophrenia and COVID-19 delirium. *Psychiatry Research*. 2020 Aug 1;290:113137.
 24. Halpin SJ, McIvor C, Whyatt G, Adams A, Harvey O, McLean L, Walshaw C, Kemp S, Corrado J, Singh R, Collins T. Postdischarge symptoms and rehabilitation needs in survivors of COVID-19 infection: A cross-sectional evaluation. *Journal of medical virology*. 2020 Jul 30.
 25. Chang MC, Park D. Incidence of post-traumatic stress disorder after coronavirus disease. In *Healthcare 2020 Dec (Vol. 8, No. 4, p. 373)*. Multidisciplinary Digital Publishing Institute.
 26. Rovere Querini P, De Lorenzo R, Conte C, Brioni E, Lanzani C, Yacoub MR, Chionna R, Martinenghi S, Vitali G, Tresoldi M, Ciceri F. Post-COVID-19 follow-up clinic: depicting chronicity of a new disease. *Acta Biomed*. 2020 Jan 1;91(9-S):22-8.
 27. Tzeng NS, Chung CH, Chang CC, Chang HA, Kao YC, Chang SY, Chien WC. What could we learn from SARS when facing the mental health issues related to the COVID-19 outbreak? A nationwide cohort study in

- Taiwan. *Translational psychiatry*. 2020 Oct 6;10(1):1-9.
28. Lee SW, Yang JM, Moon SY, Yoo IK, Ha EK, Kim SY, Park UM, Choi S, Lee SH, Ahn YM, Kim JM. Association between mental illness and COVID-19 susceptibility and clinical outcomes in South Korea: a nationwide cohort study. *The Lancet Psychiatry*. 2020 Dec 1;7(12):1025-31.
29. Kandori K, Okada Y, Ishii W, Narumiya H, Maebayashi Y, Iizuka R. Association between visitation restriction during the COVID-19 pandemic and delirium incidence among emergency admission patients: a single-center retrospective observational cohort study in Japan. *Journal of Intensive Care*. 2020 Dec;8(1):1-9.
30. Hau YS, Kim JK, Hur J, Chang MC. How about actively using telemedicine during the COVID-19 pandemic?. *Journal of medical systems*. 2020 Jun;44(6):1-2.
31. Roncero C, García-Ullán L, Javier I, Martín C, Andrés P, Ojeda A, González-Parra D, Pérez J, Fombellida C, Álvarez-Navares A, Benito JA. The response of the mental health network of the Salamanca area to the COVID-19 pandemic: The role of the telemedicine. *Psychiatry research*. 2020 Sep 1;291:113252.
32. Sullivan AB, Kane A, Roth AJ, Davis BE, Drerup ML, Heinberg LJ. The COVID-19 crisis: a mental health perspective and response using telemedicine. *Journal of patient experience*. 2020 Jun;7(3):295-301.

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