

The Impact of Culturo-Religious Factors on Coronavirus Psychosis Treatment: A Case Report in Algeria

تأثير العوامل الثقافية والدينية على علاج الذهان الناتج عن فيروس كورونا: دراسة حالة في الجزائر

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Abstract:

It has been shown that the coronavirus can infect the central nervous system via the bloodstream, potentially leading to the development of various neurological symptoms. In this case, we present a patient with coronavirus-induced psychosis who began treatment after a delay. However, the patient discontinued the medication due to side effects.

This study also highlights the influence of cultural and religious factors on the diagnosis and treatment of individuals with psychotic disorders.

Keywords: Covid-19; Coronavirus Psychosis; Cytokine storm; Culturo-religious factors; FHPD.

الملخص:

أظهرت الدراسات أن فيروس كورونا يمكن أن يصيب الجهاز العصبي المركزي عبر مجرى الدم، مما قد يؤدي إلى ظهور أعراض عصبية متعددة. في حالتنا، لدينا مريض مصاب بذهان فيروس كورونا، بدأ العلاج بعد فترة، لكنه توقف عن تناوله بسبب الآثار الجانبية للأدوية. سلطت هذه الدراسة الضوء على تأثير العوامل الثقافية والدينية على تشخيص وعلاج مرضى الاضطراب الذهاني. **الكلمات المفتاحية:** كوفيد-19؛ الذهان الناجم عن فيروس كورونا؛ عاصفة السيتوكين؛ العوامل الثقافية والدينية؛ التاريخ العائلي للاضطرابات الذهانية.

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1. Introduction:

It has been shown that the coronavirus can infect the central nervous system either through the bloodstream—by crossing the blood–brain barrier—or via olfactory invasion, by infecting peripheral nerves (Shehata et al., 2021). Additionally, the cytokine storm and hypoxia observed in SARS-CoV-2 patients may disrupt the integrity of the blood–brain barrier, leading to subsequent brain damage due to inflammation (Kulaga & Miller, 2021).

Such mechanisms can result in a range of neurological symptoms, including headache, dizziness, anosmia, encephalitis, dysgeusia, cerebrovascular disease, and ataxia (Losy, 2021; Mao et al., 2020; Varatharaj et al., 2020). The prevalence of these symptoms among infected individuals varies across studies. For instance, one study reported that 57.4% of patients hospitalized with SARS-CoV-2 experienced neurological symptoms (Romero-Sánchez et al., 2020).

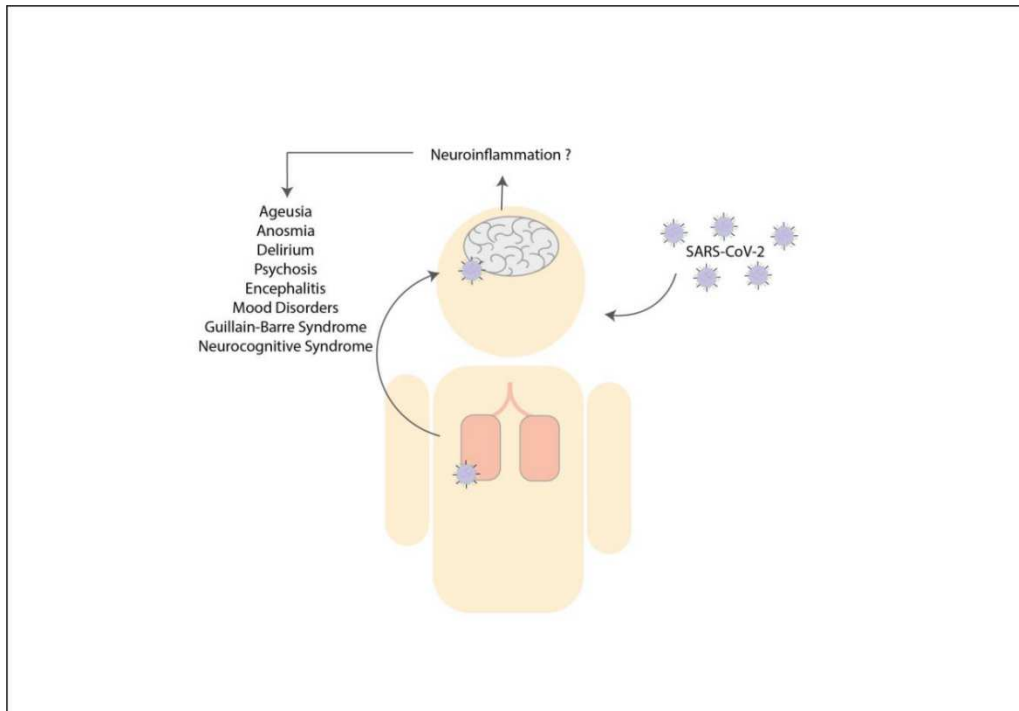
This is not the first time that infectious disease outbreaks have been linked to the onset of psychosis. Previous outbreaks, such as those caused by H1N1 influenza, Ebola, SARS, and MERS, have also been associated with the development of psychotic symptoms. It is estimated that approximately 0.9–4% of individuals infected during such epidemics or pandemics develop psychosis (Brown et al., 2020).

Common symptoms observed in these patients include severe anxiety, agitation, auditory hallucinations, and suspiciousness. Interestingly, many of these individuals did not present with typical respiratory or systemic symptoms related to SARS-CoV-2, but instead exhibited elevated levels of inflammatory markers, indicating systemic inflammation (Chacko et al., 2020).

In some Islamic and African countries, mental health symptoms are often attributed to supernatural causes, such as jinn (invisible entities created by God in Islam), celestial punishment, evil spirits, magic, or possession (Jidong et al., 2021; Labinjo et al., 2020; Lim et al., 2015). The belief that psychiatric symptoms are caused by jinn, particularly among Muslim patients, can significantly affect the diagnosis and treatment of mental health disorders (Lim et al., 2015).

2. The Impact of the Cytokine Storm on the Brain:

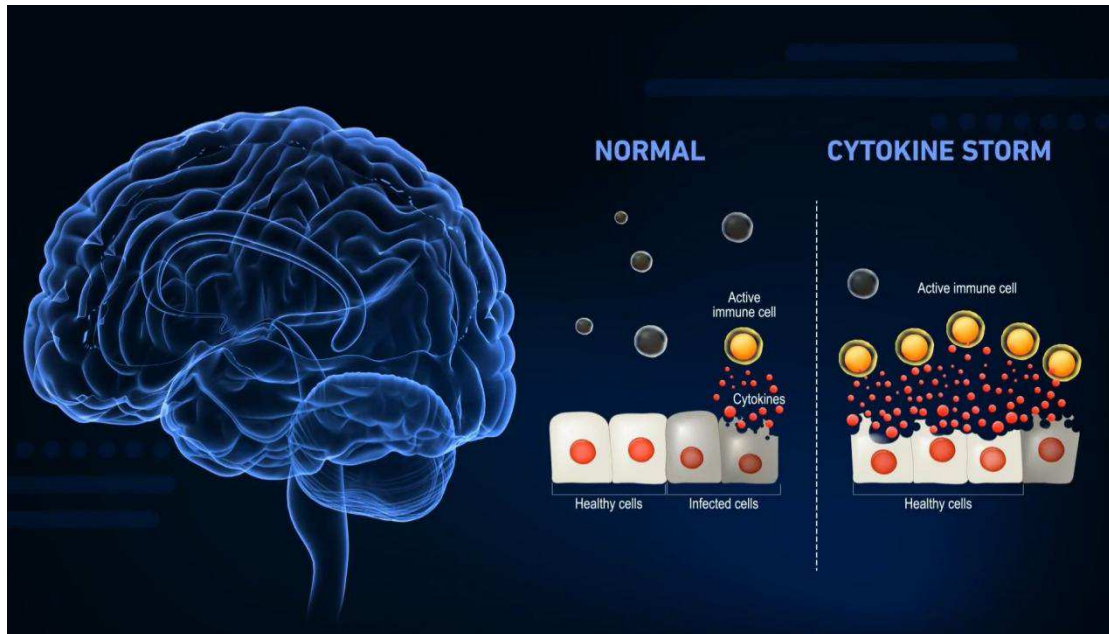
Infection with COVID-19 can lead to the development of neurological disorders in patients, primarily due to neuroinflammation resulting from a cytokine storm (Figure 1) (Guadarrama-Ortiz et al., 2020).

Figure 1: Symptoms exhibited by patients infected with SARS-CoV-2.

Source: (Bohmwald et al., 2021).

This neuro-inflammation affects brain circuits (Figure 2) by disrupting normal neuronal signaling pathways. Depending on the specific circuit involved, different symptoms may arise. For example, disruption of mood-regulating circuits can lead to the development of depressive disorders. Similarly, when anxiety-related circuits are affected, it may result in panic and anxiety. In cases where neuro-inflammation impacts one of the most critical brain regions—the sleep center—it has been observed to cause severe depression with psychotic features (Shulman, 2022).

Figure 2: Cytokine storm targeting healthy brain cells.



Source: (Bair & Czink, 2022).

3. Family History of Health Conditions:

The family history of psychotic disorders (FHPD) for our patient indicates the presence of mental health and brain-related conditions among family members. First-degree relatives have experienced depression, cluster headaches, anxiety, and obsessive-compulsive disorder (OCD), while second-degree relatives have been diagnosed with dementia.

4. Case Presentation:

Mr. X is a 34-year-old male with no prior history of mental illness. He dropped out of school in the second year of middle school. Before the onset of his psychiatric symptoms, he was an athletic individual who regularly practiced calisthenics and weightlifting. Although he had no formal mental health diagnoses, he experienced cluster headaches and, from a young age, showed signs of shortness of breath; however, he was never evaluated by a pulmonologist.

Approximately 5–6 months before the first reported COVID-19 cases in Algeria, the patient experienced significant sleep deprivation due to excessive use of social media platforms such as TikTok and Instagram. He frequently stayed up late at night and developed multiple symptoms, including fatigue, drooping eyelids, dark circles under the eyes, difficulty concentrating, daytime sleepiness, microsleeps, and hallucinations. After a family intervention, he began going to sleep at a regular hour, which led to the disappearance of all symptoms.

During the COVID-19 lockdown in 2020, Mr. X and his entire family (parents and brothers) were infected with SARS-CoV-2. They all presented with fever, fatigue, and a loss of taste and smell that lasted for approximately three weeks.

A few months after his recovery, the patient's family began noticing unusual behavior. He began spending long periods watching people and cars through the window, claiming that he was

being spied on and that he could hear strange sounds. He also became increasingly agitated. These symptoms appeared suddenly and intensified over time.

Due to cultural and religious beliefs, as well as the stigma surrounding psychiatric medication in Algeria, his parents initially took him to a *raqi* to perform *ruqyah*—an Islamic healing ritual intended to treat illness and protect against magic and the evil eye. When no improvement was observed, they consulted a radiologist for a computed tomography (CT) scan of his brain, which showed no abnormalities.

This led them to seek help from a private psychologist, who stated that the patient required psychiatric treatment. A second psychologist at a hospital confirmed the same recommendation. Subsequently, Mr. X was taken to a psychiatrist, who diagnosed him with psychosis and prescribed antipsychotic medication to be taken every evening.

After initiating treatment, the patient began to show improvement. However, he started falling asleep earlier than usual due to the medication's sedative side effects. Within two weeks, he began complaining of an increased heart rate, which he attributed to the medication. Concerned, his parents decided to discontinue the medication without consulting the psychiatrist. After stopping the medication, his symptoms reappeared, although they were milder than during the initial episode.

Today, five years after the initial diagnosis, the patient continues to exhibit psychotic symptoms, but to a lesser degree than before.

5. Discussion:

Numerous studies have reported that the risk of developing psychosis increases significantly when there is a family history of psychotic disorders. This risk is particularly elevated when the affected family member is a first-degree relative (such as a parent or sibling), or when there are multiple cases of psychosis within the family (**Naber, 2009**). Additionally, evidence suggests that individuals with both Alzheimer's disease (a type of dementia) and psychosis may contribute to an increased likelihood of familial aggregation of these conditions (**DeMichele-Sweet & Sweet, 2010**).

Cluster headache, a neurological disorder from which our patient also suffers, has not been extensively studied in terms of its psychiatric comorbidities. Existing research primarily focuses on its association with depression and anxiety (Robbins, 2013). In our case, the patient also had a history of chronic sleep deprivation, which led to several symptoms of insomnia. According to studies, prolonged sleep disturbances can increase the risk of developing psychotic disorders (Kim et al., 2024).

It is worth mentioning that in some countries, including the one in our case, there is a tendency to rely on traditional healers for treating various illnesses—especially those requiring surgery or injections. This is often due to fear rooted in cultural myths, such as the belief that an injection for sciatica might lead to permanent disability. As a result, many patients avoid consulting medical professionals and instead seek alternative treatments like *ruqyah* (Islamic spiritual healing involving prayers and rituals) (Dein & Illaiee, 2013; Islam & Campbell, 2014; Lim et al., 2015).

In our case, the patient's parents arranged for a computed tomography (CT) scan, but research shows that neither CT nor MRI scans are typically effective in detecting abnormalities in cases of recent-onset psychosis, particularly in patients under the age of 50 (Goulet et al., 2009) .

Early detection and treatment of psychosis significantly improve recovery outcomes. A qualified psychologist or social worker is often capable of making an initial diagnosis (National Institute of Mental Health, n.d.).

Antipsychotic medication is the standard treatment for psychotic and schizophrenia spectrum disorders. Initial treatment usually involves prescribing a low dose, which can be adjusted as necessary based on the patient's response (Hartling et al., 2012; Saha et al., 2016; Temmingh et al., 2018). However, these medications can produce a range of side effects, including weight gain, sedation, and extrapyramidal symptoms (Kelebie et al., 2025). Newer antipsychotics may also lead to cardiovascular and metabolic issues, sexual dysfunction, dizziness, cardiotoxicity, dry mouth, reduced brain volume, and even a shortened lifespan. Alarming, statistics show that around 50% of patients do not adhere to their treatment plans, and up to 75% discontinue antipsychotic medications within 18 months (Li et al., 2021; Read & Williams, 2019).

6. Conclusion:

The case presented in this article highlights the urgent need for increased awareness of the potential impact of viral infections—such as COVID-19—on brain health, including their role in triggering disorders like psychosis. This is especially important in countries where cultural and religious beliefs may influence both the recognition and treatment of psychiatric conditions.

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