Research Paper

Identifying Anxiety-related Physical Factors in Adult Patients With COVID-19 Hospitalized Based on the National Clinical Guideline: A Prospective Cross-sectional Study

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A B S T R A C T

Background and Objective: This study aimed to investigate the underlying causes of anxiety in patients with COVID-19 according to the "anxiety management guideline in inpatients with COVID-19" issued by the Ministry of Health and Medical Education of Iran.

Materials & Methods: Psychiatric counseling was requested for 109 adult COVID-19 patients with anxiety admitted to a hospital in Tehran City, Iran.

Results: About 59.6% of patients were female, and their mean age was 55.9 years. In 55 patients, anxiety was due to the symptoms and complications of COVID-19. The relative frequency of the causes of anxiety were as follows: Delirium (11.9%), new respiratory distress (2.8%), oxygen saturation between 85 to 90(3.7%), severe and moderate pain (5.5%), fever and chills (13.7%), cough (0.9%), and nausea and vomiting (11.9%). Anxiety in four patients (3.7%) was caused by smoking and opium withdrawal syndrome. In 50 other patients, no medical cause was found, and oxygen-saturated biofeedback training was used to manage patients (n=22) in mild to moderate anxiety cases. In cases of severe anxiety, a short-acting benzodiazepine was used in patients without a history of psychiatry (n=18) and a combination of selective serotonin reuptake inhibitors and a benzodiazepine in patients (n=10) with a history of psychiatric disorders. The most common comorbidities were diabetes and major depressive disorder (18.3% and 4.58%, respectively).

Conclusion: Though in the majority of cases, anxiety was caused by the direct effects or complications of COVID-19, appropriate intervention to manage the underlying factors can reduce the need for psychiatric medications.

Keywords: COVID-19, Anxiety, Hospitalization, Underlying physical causes

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Introduction

A novel coronavirus strain, SARS-CoV-2, emerged in December 2019, causing severe respiratory illness with high transmission rates. The World Health Organization (WHO) declared a COVID-19 pandemic on March 11, 2020. The disease has had profound health, socioeconomic, and psychological impacts [1, 2]. Quarantine measures and the high mortality associated with the disease have intensified mental health challenges, particularly among patients [3, 4].

Numerous studies indicate a high prevalence of psychiatric disorders in COVID-19 patients, with anxiety being a prominent issue. A meta-analysis conducted in 2020 reported anxiety, depression, and sleep disturbances in 47%, 45% and 34% of COVID-19 patients, respectively [5-7]. Among the Iranian population, anxiety rates among hospitalized COVID-19 patients were reported as high as 23.7% [8].

Anxiety in hospitalized patients often stems from fears of disease progression, disability, and death, exacerbated by symptoms such as shortness of breath. It may also indicate physical complications such as delirium or hypoxemia. Since the use of sedative-hypnotics can suppress respiratory symptoms, identifying the underlying cause of anxiety in hospitalized COVID-19 patients is crucial [9, 10]. Early interventions targeting these factors can reduce the need for psychiatric medications, improve patient outcomes, and optimize resource utilization during the pandemic [11, 12]. This study examines the physical factors contributing to anxiety in COVID-19 patients based on the National Clinical Guideline for Anxiety Management in hospitalized patients.

Materials and Methods

This prospective cross-sectional study was conducted from February to April 2020 at a Tehran academic medical center, in Tehran City, Iran. Adult COVID-19 patients admitted during this period were included. A confirmed COVID-19 diagnosis was based on RT-PCR (reverse transcription polymerase chain reaction) test results or clinical-radiological findings consistent with COVID-19. Psychiatric consultations were requested for patients experiencing anxiety, as determined by treating physicians, or when patients exhibited physical signs indicative of anxiety.

Data on demographic characteristics, comorbidities, psychiatric history, clinical symptoms and laboratory findings were collected. Physical causes of anxiety were classified based on the national guideline, including symptoms such as pain, respiratory distress, or delirium. Cases with no identifiable physical causes were categorized as primary anxiety. Anxiety severity was assessed using the treating psychiatrist's clinical judgment.

Management strategies varied based on anxiety severity. Mild-to-moderate anxiety was treated with oxygen biofeedback, reassurance, and behavioral interventions. Severe anxiety requires pharmacological treatments, including short-acting benzodiazepines and selective serotonin reuptake inhibitors (SSRIs) for patients with a prior psychiatric history (Figure 1).

Results

A total of 109 patients participated in the study, with a mean age of 55.9 years (range: 23–84 years). Of these, 65 patients (59.6%) were female and 44(40.4%) were male. 55 patients (50.5%) experienced anxiety linked to physical complications of COVID-19, while no identifiable physical cause was found in 50 patients (45.9%). Data on four patients (3.6%) were incomplete.

The distribution of anxiety-causing factors was as follows:

Delirium: 13 patients (11.9%); fever and chills: 15 patients (13.7%); gastrointestinal symptoms: 13 patients (11.9%); low oxygen saturation: 4 patients (3.7%); new respiratory distress: 3 patients (2.8%); pain (moderate/severe): 6 patients (5.5%); Cough: 1 patient (0.9%) and withdrawal symptoms from smoking or opium use: 4 patients (3.7%).

Among comorbid conditions, diabetes (18.3%) and major depressive disorder (4.58%) were the most common.

Discussion

Mild-to-moderate anxiety was managed using oxygen saturation biofeedback and non-pharmacological interventions. Severe anxiety required short-acting benzodiazepines, which were combined with SSRIs in cases of recurrent or chronic anxiety [8, 13].

Our findings highlight that anxiety in hospitalized COVID-19 patients often results from physical symptoms or complications of the disease. This finding aligns with previous studies that report anxiety as a secondary response to physiological stressors such as hypoxemia, fever, and delirium [11, 12, 14]. Addressing these underlying causes can effectively alleviate anxiety without
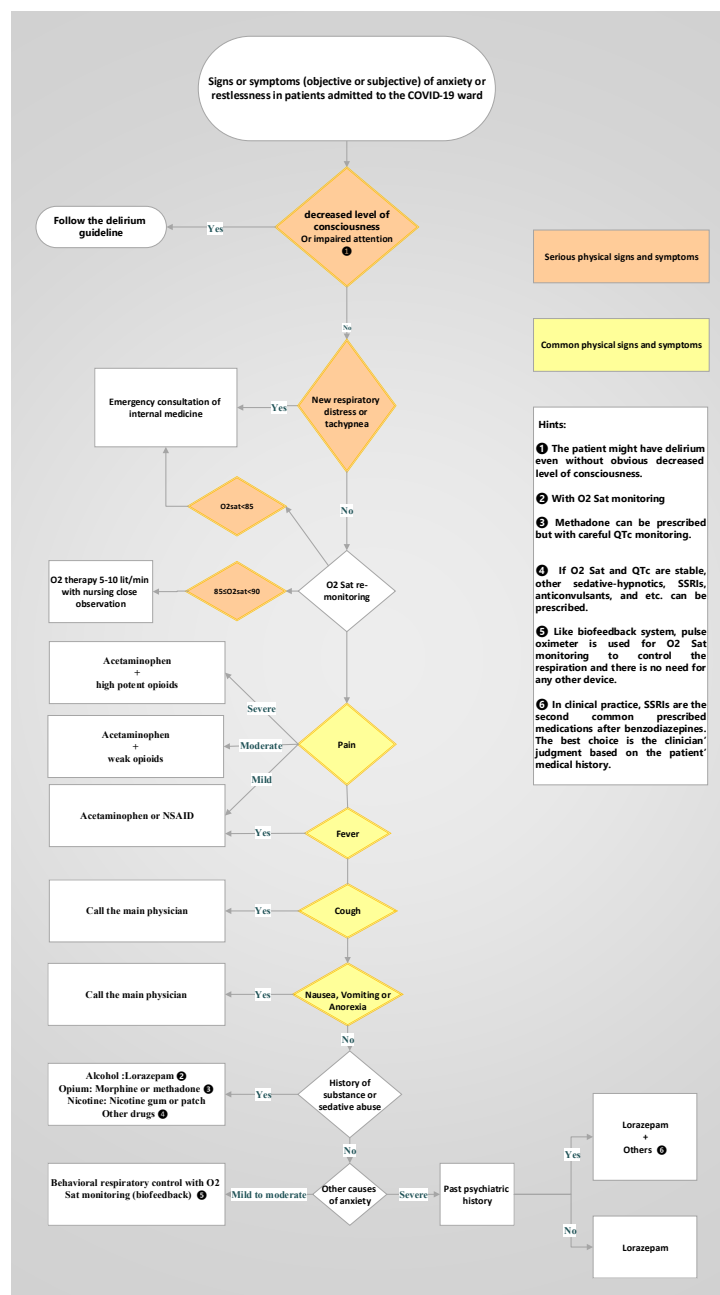
Figure 1. Anxiety management guideline in hospitalized COVID-19 patients

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over-reliance on sedative medications, which may compromise respiratory function.

The high rate of anxiety linked to fever and delirium underscores the importance of comprehensive fever management and monitoring of neurological status in COVID-19 patients. Additionally, gastrointestinal symptoms, often overlooked in psychiatric assessments, contributed significantly to anxiety, emphasizing the need for multidisciplinary care.

Interestingly, nearly half of the patients exhibited primary anxiety with no identifiable physical cause. This finding suggests a substantial role for psychological support and cognitive-behavioral strategies in managing anxiety during hospitalization.

Our study has several limitations. The reliance on clinician judgment for anxiety assessment may introduce subjectivity, and the small sample size limits the generalizability of our findings. Future research should incorporate standardized anxiety scales and explore the impact of tailored interventions on long-term outcomes.

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Conclusion

In conclusion, anxiety in hospitalized COVID-19 patients is often caused by the disease's direct symptoms or complications. By addressing these underlying factors, healthcare providers can significantly reduce the need for pharmacological interventions, leading to better patient outcomes. Early identification and management of anxiety, integrated into multidisciplinary care protocols, are essential in optimizing the treatment of COVID-19 patients.

Ethical Considerations

Compliance with ethical guidelines

There were no ethical considerations to be considered in this research.

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Authors' contributions

Conceptualization, supervision and project administration: Seyed Shahab Banihashem, Mohammad Taghi Yasamy, Alireza Shamsi, Ali Kheradmand, Ali Pirsalehi, Mehrshad Poursaeid and Mohammadreza Moshari; Data collection, resources, writing the original draft: Maryam Shamekhi, Somaye Motazedian and Arash Danesh; Review and editing: Nastaran Samani.

Conflict of interest

The authors declared no conflict of interest.

Acknowledgments

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