

# Psychoneurotic symptoms among COVID infected patients; case series study

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## Abstract

**Introduction:** After the initial COVID-19 outbreaks, caused by the SARS-CoV-2 virus, prolonged multiple post-infectious symptoms have continued to develop. Those who initially recovered from SARS-CoV-2 virus continue to experience a worsening life quality and a delayed return to work, which leads to great burden on the health care system. Up to date research reveals that psychiatric illness is both a risk factor for, and consequence of, COVID-19. The aim of this study is to describe the psychoneurotic symptoms among COVID infected patients.

**Patients and methods:** A case series study of 101 patients infected with COVID virus of different severity of the disease in Tikrit city during 2020-2022. The patients were followed for 3 months. Information regarding age, gender other diseases, signs and symptoms, and psychoneurotic symptoms also were documented. Lung involvement percentage was assessed by CT. The SPO<sub>2</sub>% was reported for the patient at resting sitting position. The blood fasting sugar was tested; for all patients diastolic and systolic blood pressure were examined.

**Results:** The reported cases with neuropsychiatric symptoms was 101. Case sleeplessness was reported among 60 (59%), tremor among 31(31%), and hallucination was reported among 10 (10%). The auditory hallucinations were reported among 4(40%), olfactory hallucinations reported among 5(50%), and visual hallucinations among 1(10%).

Males were more affected than females regarding hallucinations 7(70%), and 3(30%) respectively, and tremor 17(54.8%), 14(45.2%). Sleeplessness was higher among females than males, 33(55%), 27(45%) respectively. The age groups 21-30 years and ≥ 61 years had the highest percentages of hallucination 3(30%), 3(30%), while age group 31-40 years had the higher percentage of sleeplessness 16(26.7%) and tremor was high among those aged ≥ 61 years, 11(35.5%). These relations were statistically significant.

**Conclusions:** Neuropsychiatric symptoms were reported as follows; sleeplessness, tremor, and hallucination. Hallucinations mainly affected males, while tremor and sleeplessness mainly occurred in females. The patients who had hallucinations had high lung involvement measured by CT of the chest. The patients who had hyperglycemia had higher percentages of sleeplessness, and hallucinations. COVID 19 vaccinated persons had lower percentages of sleeplessness, hallucinations and tremor.

**Keywords:** Psychoneurotic symptoms in COVID patients, COVID 19 Psychoneurotic symptoms

## Introduction

The still ongoing global COVID-19 pandemic (public health crisis) has had a great and very serious effects on all sides of daily life of patients [1]. The whole effect of this COVID-19 pandemic catastrophe most likely will not be fully evaluated for years. In the early periods of this pandemic, medical attention was mostly directed towards the acute COVID-19 associated mortality and morbidity. After several months into the pandemic, emerging reports described persistent neuropsychiatric and physical complications in the aftermath of SARS-CoV-2 infection. Literature also described persistent or residual neuropsychiatric symptoms in critically ill survivors following admission to an intensive care unit (ICU). Follow-up research of post-COVID-19 shows that asymptomatic and also mild infection may cause the following; “cognitive impairment, delirium, extreme fatigue, and clinically relevant mood symptoms” [2, 3]. Up to date research reveals that psychiatric illness is both a risk factor for, and consequence of COVID-19. An electronic health record (EHR)-based cohort research of over 60,000 COVID-19 cases, of a documented psychiatric diagnosis in the prior year was associated with a 65% increased risk of COVID-19 when compared with a matched cohort of patients with physical health issues without psychiatric diagnoses [4]. Additionally, over the 3 months after COVID-19 infection diagnosis, 18% of patients were diagnosed with a psychiatric illnesses, with

around 6% of them reported as a new case diagnosis (e.g., dementia, anxiety, and insomnia). Similar increases in incidental psychiatric diagnoses among US adults with COVID-19 were reported by Czeisler et al. [5]. Also the sleep disorders which include sleep patterns, and sleep quality have all been affected in profound and somewhat unexpected ways in COVID 19 infected patients [6]. The aim of this study is to describe the psychoneurotic symptoms among COVID infected patients.

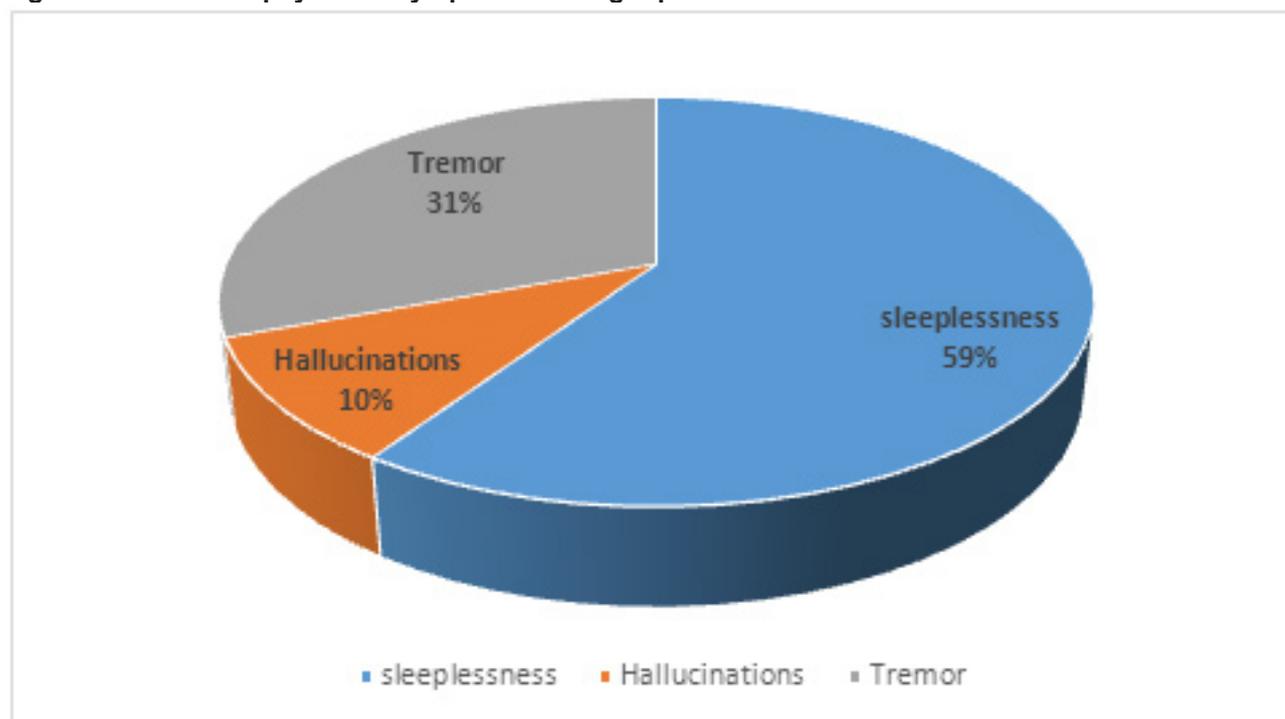
## Patients and Methods

A case series study of 101 patients infected with COVID virus in Tikrit city during 2020-2022. The reported patients had different severity of the disease. The patients were followed for 3 months. Information regarding age, gender, other diseases, signs and symptoms, and psychoneurotic symptoms also were documented. Lung involvement percentage was assessed by CT. The SPO2% was reported for the patients at resting sitting position. The blood fasting sugar was tested for all patients and diastolic and systolic blood pressure was examined. All the patients were free of psychoneurotic symptoms during the follow up of the patients and 2 patients needed neurological assessment. Patient agreement was taken before enrollment in the study, after full explanation about the study and the procedure used. Data was analyzed and interpreted using SPSS program.

## Results

The reported cases with neuro-psychotic symptoms was sleeplessness reported among 60(59%), tremor among 31(31%), and hallucination was reported among 10(10%), as shown in Figure 1.

**Figure 1: The neuro-psychotic symptoms among reported cases**



The auditory hallucinations were reported among 4(40%), olfactory hallucinations reported among 5(50%), and visual hallucinations among 1(10%) as shown in Table 1.

**Table 1. The type of hallucination reported among patients**

Hallucinations	Frequency	Percentage
Auditory Hallucinations	4	40.0
Olfactory Hallucinations	5	50.0
Visual hallucinations	1	10.0
Total	10	100.0

Males were more affected than females regarding hallucinations 7(70%), and 3(30%) respectively, and tremor 17(54.8%), 14(45.2%), sleeplessness was higher among females than males 33(55%), 27(45%) respectively. The age groups 21-30 years and  $\geq 61$  years had the highest percentages of hallucination 3(30%), 3(30%), while age group 31-40 years had higher percentage of sleeplessness 16(26.7%) and tremor was high among those aged  $\geq 61$  years 11(35.5%). These relations were statistically significant as shown in Table 2. The vaccinated persons had lower percentages of sleeplessness, hallucinations and tremor 14(23.3%), 1(10%), and 3(9.7%) respectively; this relation was not statistically significant. The patients who had hyperglycemia had higher percentages of sleeplessness, hallucinations and tremor 24(40%), 7(70%), and 18(58.1%) respectively; this relation was not statistically significant. The patients who had hallucinations had high lung involvement measured by CT of the chest ( $13 \pm 10.4$ ), the SPO2 of those who had hallucinations was ( $92.3 \pm 5.4$ ).

**Table 2. The risk factors associated with neuro-psychotic symptoms**

		Sleeplessness	Hallucination	Tremor	P value
		F (%)	F (%)	F (%)	
Sex	Male	27(45%)	7(70%)	17(54.8%)	0.28
	Female	33(55%)	3(30%)	14(45.2%)	
Age	21-30	10(16.7%)	3(30%)	1(3.2%)	0.02
	31-40	16(26.7%)	1(10%)	8(25.8%)	
	41-50	18(30%)	2(20%)	6(19.4%)	
	51-60	10(16.7%)	1(10%)	5(16.1%)	
	$\geq 61$	6(10%)	3(30%)	11(35.5%)	
VaccinationStatus	Yes	14(23.3%)	1(10%)	3(9.7%)	0.21
	No	46(76.7%)	9(90%)	28(90.3%)	
Hyperglycemia	Yes	24(40%)	7(70%)	18(58.1%)	0.09
	No	36(60%)	3(30%)	13(41.9%)	
CT chest		$8.5 \pm 12.8$	$13 \pm 10.4$	$11.6 \pm 15.5$	0.4
SPO2		$93.1 \pm 4.1$	$92.3 \pm 5.4$	$91.6 \pm 4.7$	0.3
Diastolic BP		$54 \pm 12.9$	$54 \pm 16.5$	$48.4 \pm 11$	0.1
Systolic BP		$89.7 \pm 18.5$	$94 \pm 20.7$	$85.8 \pm 16.3$	0.4

## Discussion

This study revealed that symptoms in the form of sleeplessness were reported among (59%), tremor among (31%), and hallucination was reported among (10%). Coronasomnia or COVID-somnia are colloquial terms that have been suggested to include the group of symptoms of sleep dysfunction like the followings “as insomnia, disrupted sleep continuity, changes in sleep-wake cycle, feelings of non-restorative sleep and decreased sleep quality arising either due to stresses related to fear of the virus itself or the psychosocial impact on daily living (like as loss of job, financial effects, social isolation, or the actual psychological and medical complications of being infected with COVID-19”. [7] Recently, a great number of published articles associating changes in sleep among various patients in the context of the pandemic COVID-19.[6] Goldstein C.A., et al found that the prevalence of insomnia was 11% [8]. Wesselius H.M., et al found that poor sleep is associated with greater susceptibility to COVID-19 infection and worse clinical course among hospitalized patients, however, the cause-and-effect relationship remains undefined [9].

Multiple articles revealed that patients with movement disorders, experienced a worsening of their symptoms, e.g., tremor, bradykinesia, and gait disturbances, after severe COVID-19 [10]. The transient or permanent movement disorders development following viral infection is a well-known fact that has also been documented after SARS-CoV-2 infection [11]. Pre-infection neurological status represents a major issue in understanding whether a direct link exists between infection and neurological changes [12].

Mirfazeli, F.S., et al found that (75.1%) showed at least one neuropsychiatric symptom and found anosmia (33.8%) among them [13]. These findings are almost in line with previous articles, however in Ling Mao et al's research, fewer patients (36.4%) were reported to show neuropsychiatric complications. [14] Mirfazeli, F.S., et al found around 11% of their patients reported visual or auditory hallucinations which could be secondary to delirium, or neuro-inflammation [13], both of which are possible based on previous literature [15, 16].

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