



# Prevalence and Associated Factors of Sleep Disorders in Recovered COVID-19 Patients

Hamidreza Nikyar<sup>1\*</sup>, Bahareh Zakeri<sup>2</sup>, Fateme Sharafeddin<sup>2</sup>

<sup>1</sup>Clinical Research Development Center, Najafabad Branch, Islamic Azad University, Najafabad, Iran

<sup>2</sup>Faculty of Medicine, Najafabad Branch, Islamic Azad University, Najafabad, Iran

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### \*Corresponding Author:

Clinical Research Development  
Center, Najafabad Branch,  
Islamic Azad University,  
Najafabad, Iran

## ABSTRACT

**Introduction:** Sleep disorders refer to a group of conditions that disrupt standard sleep patterns and can affect overall health, safety, and quality of life through the disruption of physical, mental, social, and emotional functioning. Considering the impact of COVID-19 on the emergence of certain physical and mental disorders, sleep disorders in COVID-19-recovered individuals are viewed as one of the post-pandemic challenges. Identifying the risk factors associated with sleep disorders in COVID-19-recovered individuals in Iran and providing practical strategies to mitigate these disorders is essential. We aimed to investigate the prevalence of sleep disorders and their related factors in COVID-19-recovered individuals.

**Methods and Materials:** This cross-sectional study was conducted at Dr. Shariati Hospital in 2023. The study involved 384 patients diagnosed with COVID-19, with diagnoses confirmed by PCR test. Participants were contacted, and after providing explanations and obtaining consent, an online questionnaire link including demographic information and the Lynch Sleep Disorder Questionnaire was sent to the subjects. This 17-question survey evaluates sleep disorders in three sections: difficulty falling asleep, maintaining sleep, and waking up from sleep. This study considered disruption in any of these three sections a sleep disorder. The validity and reliability of this questionnaire have been confirmed in previous studies. A non-probability convenience sampling method was employed. Data analysis was conducted using Kolmogorov-Smirnov, student's t-test, ANOVA, Kruskal-Wallis, Mann-Whitney, Chi-square, and Fisher's tests. Data were analyzed using SPSS software.

**Results:** Of 384 participants, 170 (44.3%) were men and 214 (55.7%) were women, with a mean age of  $39.34 \pm 15.47$  years. Among them, 120 individuals (31.3%) had sleep disorders. Factors significantly associated with sleep disorders in recovered COVID-19 patients included age over 40 years ( $p = 0.026$ ), overweight and obesity ( $p = 0.001$ ), history of psychiatric illness before infection ( $p = 0.017$ ), prior use of sleep medications ( $p = 0.007$ ), less than six months since COVID-19 infection ( $p = 0.017$ ), and hospitalization due to COVID-19 ( $p = 0.005$ ). Additionally, we found no significant relationship between sleep disorders and gender, occupation, smoking, history of underlying disease, or vaccination history.

**Conclusion and Discussion:** In our study, the prevalence of sleep disorders was significantly higher than in previous studies. It is essential to provide timely treatment and appropriate strategies to prevent the complications of sleep disorders, which can affect not only the general health of individuals but also the social and economic status of countries. Special attention is needed for COVID-19-recovered individuals who have the identified risk factors. Accurate interventions require the education of physicians, healthcare workers, and patients. Repeating the study in other cities in Iran and conducting systematic reviews and meta-analyses in this field is recommended.

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