

The Change in Overall Sleep Quality before and after COVID-19 Pandemic due to COVID-19 Related Family Economic Strain and Social Interactions

Rupesh Boddapati¹, Jessica Zhukivska, Rowaida Hamdan, Dr. Xin Wang², Dr. Hong Xie³

¹College of Medicine and Life Sciences, 3000 Arlington Avenue, The University of Toledo, Toledo OH 43615

²Professor, Vice Chair for Research, Department of Neurosciences and Psychiatry, 3000 Arlington Avenue, The University of Toledo, Toledo OH 43615

³Assistant Professor, Department of Neurosciences and Psychiatry, 3000 Arlington Avenue, The University of Toledo, Toledo OH 43615

Email: Rupesh.Boddapati@rockets.utoledo.edu

Received: 12/5/2024

Accepted: 12/20/2024

Published: 10/15/2025

The COVID-19 pandemic led to unprecedented challenges in society with impacts on mental health. The objective of this study was to explore how sleep quality was affected by economic strain, perceived stress, and limited social interactions during the COVID pandemic.

Acute trauma survivors (n=27) were recruited in a pre-pandemic study after life-threatening experiences and completed a 12-month follow-up before the onset of the pandemic (March 2020) and completed a follow-up evaluation after the pandemic. They completed Pittsburgh Sleep Quality Index (PSQI) for sleeping disturbance symptoms before and after the pandemic, and Family Economic Stress Strain questionnaire (FESS), COVID-19 Stress Scale (CSS), and COVID-19 Social Interactions (CSI) for experiences during the COVID-19 pandemic. Association of PSQI changes and pandemic experiences are analyzed using linear regression analysis:

The regression model demonstrated significant effects of economic stress (FESS, $r[25]=1.10E-16$) and social interactions (CSI ($r[23]=0.00$) on changes in sleep quality ($p<0.001$) over the pandemic period, indicating a positive correlational linear relationship. However, the correlation coefficient of each variable is low.

In conclusion, the findings suggest that financial hardship may increase sleeping disturbance during the COVID-19 pandemic. Social interaction also affected the sleep quality, but the effects might be less consistent across participants. The effects of both factors are low, suggesting sleep quality may also be affected by other complex experiences during the pandemic.

Keywords: Sleep Quality, Covid-19