COVID-19 pandemic impacts mental health worldwide

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A study conducted at Columbia University Mailman School of Public Health reports a high global prevalence of both depression and anxiety during the COVID-19 pandemic and shows how implementation of

mitigation strategies including public transportation and school closures, and stay-at-home orders impacted such disorders. The results are published in *Psychological Medicine*.

"Our research found an elevated global prevalence of these mental health issues during COVID-19 and also revealed there was a wide variance in each at the region- and country-level," said, João Castaldelli-Maia, MD, Ph.D., NIDA-INVEST Postdoctoral Fellow in the Department of Epidemiology, and lead author. In particular, Asia (most studies came from China) presented lower levels of both anxiety and depression, compared to the other regions of the world. Closure of public transportation increased levels of anxiety, whether it was two weeks or four weeks past the passage of closure enactment, especially in Europe."

Using an end date of July 29th, 2020, the researchers analyzed data from Pubmed, MEDLINE, Web of Science, and medRxiv, among other databases, for depression and anxiety prevalence. They also reviewed the Oxford Covid-19 Government Response Tracker for the containment and closure policies indexes; and the Global Burden of Disease Study for previous levels of depression and anxiety. The WHO database which includes COVID literature for studies published by the same date was also used.

In total, 226,638 individuals were assessed within 60 included studies. Global prevalence of both depression and anxiety during the COVID-19 pandemic were 24 percent and 21 percent, respectively. Asia with rates of 18 percent for each, and China especially, had the lowest prevalence of both disorders. Regarding the impact of mitigation strategies on mental health—whether it was public transportation closures, school closings, workplace closures, cancelation of public events, or restrictions on gathering—only public transportation closures increased prevalence of anxiety, especially in Europe.

Castaldelli-Maia and colleagues found a 21 percent global prevalence of anxiety. Asia had lower levels of anxiety (18 percent) compared to other regions of the world (29 percent). In this case, Europe did not differ from Asia and other regions of the world. Again, a subgroup analysis at the country-level showed that China had a lower prevalence of anxiety at 15.5 percent compared to all other countries at 26 percent.

"Our study confirms how critical it is to investigate levels of mental health disorders and the possible impacts of social distancing measures on mental health outcomes, according to Silvia Martins, MD, Ph.D., associate professor of Epidemiology at Columbia Mailman School, and senior author. "Mental health concerns should not be viewed only as a delayed consequence of the COVID-19 pandemic, but also as a concurrent epidemic."

Within the subgroup of Asian countries, estimates of depression prevalence ranged from 15 percent to 20 percent. When comparing the prevalence of depression in the pre-and post-COVID-19 eras, the estimates ranging from 1.3-3.4 percent, are demonstrably larger after the initiation of COVID-19.

Depression was observed among 26 percent of the population in Europe, and among 39 percent in other non-Asia regions of the world. A further analysis showed that China had a lower prevalence of depression, 16 percent compared with 29 percent in other countries.

Similarly, the prevalence of anxiety, as reported in the subgroup of Asian countries is higher post-COVID-19. Rates of anxiety prior to COVID-19 ranged from 2.1 to 4.1 percent vs. 18 percent in the present study. Increases in anxiety can be observed in countries outside Asia and Europe (3 to 7 percent vs. 29 percent).

"The lower levels of depression and anxiety that we found in Asian

countries could be culture-dependent," observes Martins.

The effect of public transportation closures on anxiety levels points to the importance of these systems to global populations, particularly the results in Europe but not in Asia. "These findings could be linked to the fact that Europe has a more effective and implemented public transport network on average, making Europeans depending more on public transportation than people in Asian countries," noted Martins.

"The COVID-19 pandemic, and the resulting physical distancing measures to mitigate viral spread, has certainly impacted population mental health worldwide, and the high prevalence of mental health disorders is a considerable concern during the COVID era," said Castaldelli-Maia. "These results have important implications for policymakers and show the urgent need for the healthcare sector to increase support now for prevention and early intervention of depression and anxiety."

More information: João M. Castaldelli-Maia et al. Investigating the effect of national government physical distancing measures on depression and anxiety during the COVID-19 pandemic through meta-analysis and meta-regression, *Psychological Medicine* (2021). DOI: 10.1017/S0033291721000933

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