Living Rapid Review: Mental health outcomes of adults hospitalized for COVID-19
March 2021 Update

Key Findings

<table>
<thead>
<tr>
<th>Evidence on Mental Health Disorder Prevalence of Patients Hospitalized for COVID-19</th>
<th>Certainty</th>
</tr>
</thead>
</table>
| During hospitalization | Depression symptoms: 43%-46%
Insomnia: 43-54%
Adjustment disorder: 27%
Anxiety symptoms: 23-39% | Low* |
| ≤ 3 months after hospitalization | Depression symptoms: 10-66%
Insomnia: 40%
PTSD symptoms: 15-31%
Anxiety symptoms: 22-43%
Obsessive-compulsive symptoms: 20% | Low* |
| Inpatients vs outpatients | Patients hospitalized with COVID-19 have a 40% increased risk of being diagnosed with a mental health disorder than outpatients with COVID-19. | Moderate |
| Differences by patient and disease characteristics | Studies were inconsistent; however, some small studies indicated:
- **Women** may be at higher risk of anxiety, PTSD, and insomnia symptoms than men.
- **Younger** patients may be at higher risk of PTSD symptoms compared to older patients.
- **Severity of COVID-19** may be associated with higher risk of anxiety, PTSD, and insomnia symptoms. | Low* |

*The ESP expects these estimates to change when better data become available.

Background

One in 7 people diagnosed with COVID-19 will be hospitalized, some of whom will develop life-threatening complications. These patients may undergo invasive procedures requiring sedation or paralytic agents which can affect their ability to understand and interact with their providers. Additionally, patients may be stressed by ICU settings, experience isolation from friends and family, or experience financial hardship due to disruption from work. Experts warn severe symptoms of COVID-19 and related stressors may put patients at higher risk of new or worsened mental health disorders.

Goal

The goal of this living rapid review is to summarize research evidence on the prevalence of mental health disorders (*eg*, depression, anxiety, PTSD, psychotic disorders, and substance use disorders) among adults who have been hospitalized for COVID-19 compared with those hospitalized for non-COVID-19 reasons and outpatients with COVID-19. Evidence on variation in the prevalence of mental health disorders by patient and disease characteristics and on mental health care utilization and resource needs for patients hospitalized for COVID-19 will also be synthesized on an ongoing basis.
Methods

The ESP research team searched MEDLINE, the WHO COVID-19 database, PsycINFO, and CINAHL for articles published through October 2020. Published cohort and cross-sectional studies that assessed the prevalence of mental health disorders, mental healthcare utilization, and mental healthcare resource needs among patients who had been hospitalized for COVID-19 were included. One reviewer assessed articles for inclusion, evaluated study quality, extracted data, and assessed strength of evidence using predefined criteria with verification by a second reviewer. This living rapid review is updated every 4 months, or more frequently if new and relevant evidence becomes available. See the full ESP report for complete details on the methods.

Results

<table>
<thead>
<tr>
<th>Study characteristics</th>
<th>3 retrospective cohort and 10 cross-sectional studies (N=65,492)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>Patients who have been hospitalized for COVID-19</td>
</tr>
<tr>
<td>Comparators</td>
<td>No comparison group; outpatients with COVID-19; subgroups vs each other</td>
</tr>
<tr>
<td>Outcomes</td>
<td>Prevalence of anxiety, depression, PTSD, obsessive-compulsive and insomnia symptoms; prevalence of diagnosed Generalized Anxiety Disorder (GAD), Major Depressive Disorder (MDD), insomnia, and adjustment disorder</td>
</tr>
<tr>
<td>Settings</td>
<td>China (7 studies), United States (2), Italy (2), Iran (1), Korea (1)</td>
</tr>
<tr>
<td>Timing</td>
<td>During or ≤ 3 months after hospitalization</td>
</tr>
</tbody>
</table>

Conclusion

As of October 2020, evidence from 13 primarily fair-quality studies suggests the prevalence of mental health disorders – including insomnia, depression, anxiety, and adjustment disorder – was high among hospitalized patients with COVID-19. The post-hospitalization prevalence of anxiety and insomnia was similar or slightly lower up to 3 months following hospitalization. Symptoms of PTSD and obsessive-compulsive symptoms were also common after hospitalization.

Future Research Needs

- More studies should evaluate the prevalence of mood, anxiety, trauma-related, psychotic, and substance use disorders among people who have been hospitalized for COVID-19.
- Larger, longer, multi-center studies should be conducted to provide more rigorous estimates of mental health disorder prevalence.
- More studies should compare people hospitalized for COVID-19 to people hospitalized for reasons other than COVID-19, as well as outpatients with COVID-19.
- Researchers should report and adjust for potential confounders like preexisting mental health disorders, medications, and medical comorbidities.
- Mental health care utilization and resource needs of patients after COVID-19 hospitalization discharge should be assessed using longitudinal studies.