

Brief description of patient problem/setting (summarize the case very briefly):

The COVID-19 pandemic has made its mark on the entire world. Lots of focus has been direct towards the general medical complications of the virus while much little focus is directed towards the impact on mental health.

Search Question: Within the general population, has the COVID-19 pandemic impacted the mental health status?

Question Type: What kind of question is this? (boxes now checkable in Word)

- Prevalence Screening Diagnosis
- Prognosis Treatment Harms

Assuming that the highest level of evidence to answer your question will be meta-analysis or systematic review, what other types of study might you include if these are not available (or if there is a much more current study of another type)? Please explain your choices.

Aside from systematic reviews and meta-analyses, I believe case-controlled studies, retrospective, and prospective studies will benefit my PICO question. Witnessing changes within an individual after an event, i.e. COVID-19, will demonstrate impact the pandemic has made on patients both directly and indirectly. I anticipate that most of the research articles I will come across to be observational in nature.

PICO search terms:

P	I	C	O
General population	COVID-19	None	Depression
	Pandemic		Anxiety
	Corona		Psychological disorders
			Psychological distress

Search tools and strategy used:

PubMed:

Covid-19 and mental health → 11,268

+5 years → 11,268 +Meta analyses/Systematic review/RCT → 350

Science Direct:

Covid-19 and mental health → 12,072
+5 years → 12,070 +Research articles → 6,103 +Psychology → 1,366

Cochrane Library:

Covid-19 and mental health → 2

Results found:

Article 1

Citation:

Salari N, Hosseini-Far A, Jalali R, Vaisi-Raygani A, Rasoulpoor S, Mohammadi M, Rasoulpoor S, Khaledi-Paveh B. Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: a systematic review and meta-analysis. *Global Health*. 2020 Jul 6;16(1):57. doi: 10.1186/s12992-020-00589-w. PMID: 32631403; PMCID: PMC7338126.

Type of Study:

Meta-analysis/Systematic Review

Abstract:

Background: The COVID-19 pandemic has had a significant impact on public mental health. Therefore, monitoring and oversight of the population mental health during crises such as a pandemic is an immediate priority. The aim of this study is to analyze the existing research works and findings in relation to the prevalence of stress, anxiety and depression in the general population during the COVID-19 pandemic.

Method: In this systematic review and meta-analysis, articles that have focused on stress and anxiety prevalence among the general population during the COVID-19 pandemic were searched in the Science Direct, Embase, Scopus, PubMed, Web of Science (ISI) and Google Scholar databases, without a lower time limit and until May 2020. In order to perform a meta-analysis of the collected studies, the random effects model was used, and the heterogeneity of studies was investigated using the I^2 index. Moreover, data analysis was conducted using the Comprehensive Meta-Analysis (CMA) software.

Results: The prevalence of stress in 5 studies with a total sample size of 9074 is obtained as 29.6% (95% confidence limit: 24.3-35.4), the prevalence of anxiety in 17 studies with a sample size of 63,439 as 31.9% (95% confidence interval: 27.5-36.7), and the prevalence of depression in 14 studies with a sample size of 44,531 people as 33.7% (95% confidence interval: 27.5-40.6).

Conclusion: COVID-19 not only causes physical health concerns but also results in a number of psychological disorders. The spread of the new coronavirus can impact the

mental health of people in different communities. Thus, it is essential to preserve the mental health of individuals and to develop psychological interventions that can improve the mental health of vulnerable groups during the COVID-19 pandemic.

Key Points:

- 5 studies w/ sample size of 9000+ patients → Prevalence of stress in 29.6%
- 17 studies w/ sample size of 63,000+ patients → Prevalence of anxiety in 31.9%
- 14 studies w/ sample size of 44,000+ patients → Prevalence of depression in 33.7%

Why I Chose This Article:

- 36 articles included in the study
- 100K+ patients included in the total study
- Different aspects of mental status changes were assessed
- Published last year
- Meta-analysis/Systematic review

Article 2

Citation:

Vindegaard N, Benros ME. COVID-19 pandemic and mental health consequences: Systematic review of the current evidence. *Brain Behav Immun.* 2020 Oct;89:531-542. doi: 10.1016/j.bbi.2020.05.048. Epub 2020 May 30. PMID: 32485289; PMCID: PMC7260522.

Type of Study:

Systematic review

Abstract:

Background: During the COVID-19 pandemic general medical complications have received the most attention, whereas only few studies address the potential direct effect on mental health of SARS-CoV-2 and the neurotropic potential. Furthermore, the indirect effects of the pandemic on general mental health are of increasing concern, particularly since the SARS-CoV-1 epidemic (2002-2003) was associated with psychiatric complications.

Methods: We systematically searched the database Pubmed including studies measuring psychiatric symptoms or morbidities associated with COVID-19 among infected patients and among none infected groups the latter divided in psychiatric patients, health care workers and non-health care workers.

Results: A total of 43 studies were included. Out of these, only two studies evaluated patients with confirmed COVID-19 infection, whereas 41 evaluated the indirect effect of the pandemic (2 on patients with preexisting psychiatric disorders, 20 on medical health care workers, and 19 on the general public). 18 of the studies were case-control studies/compared to norm, while 25 of the studies had no control groups. The two studies

investigating COVID-19 patients found a high level of post-traumatic stress symptoms (PTSS) (96.2%) and significantly higher level of depressive symptoms ($p = 0.016$). Patients with preexisting psychiatric disorders reported worsening of psychiatric symptoms. Studies investigating health care workers found increased depression/depressive symptoms, anxiety, psychological distress and poor sleep quality. Studies of the general public revealed lower psychological well-being and higher scores of anxiety and depression compared to before COVID-19, while no difference when comparing these symptoms in the initial phase of the outbreak to four weeks later. A variety of factors were associated with higher risk of psychiatric symptoms and/or low psychological well-being including female gender, poor-self-related health and relatives with COVID-19.

Conclusion: Research evaluating the direct neuropsychiatric consequences and the indirect effects on mental health is highly needed to improve treatment, mental health care planning and for preventive measures during potential subsequent pandemics.

Key Points:

- 43 studies were included
- 2 studies evaluated patients with COVID-19 while the others focused on indirect effect of pandemic
- 18 of the studies were case-controlled studies, 25 had no control group
- Patients with psychiatric conditions reported worsening of symptoms
- General population: Lower levels of psychological well-being and higher levels of anxiety and depression reported compared to before COVID-19
- Higher risk of psychiatric symptoms seen in females, poor-self-related health, and relatives with COVID-19

Why I Chose This Article:

- 43 articles included in the study
- Published last year
- Meta-analysis/Systematic review
- Also focused on healthcare employees along with general population

Article 3

Citation:

Loades ME, Chatburn E, Higson-Sweeney N, Reynolds S, Shafran R, Brigden A, Linney C, McManus MN, Borwick C, Crawley E. Rapid Systematic Review: The Impact of Social Isolation and Loneliness on the Mental Health of Children and Adolescents in the Context of COVID-19. *J Am Acad Child Adolesc Psychiatry*. 2020 Nov;59(11):1218-1239.e3. doi: 10.1016/j.jaac.2020.05.009. Epub 2020 Jun 3. PMID: 32504808; PMCID: PMC7267797.

Type of Study:

Systematic Review

Abstract:

Objective: Disease containment of COVID-19 has necessitated widespread social isolation. We aimed to establish what is known about how loneliness and disease containment measures impact on the mental health in children and adolescents.

Method: For this rapid review, we searched MEDLINE, PsycInfo, and Web of Science for articles published between January 1, 1946, and March 29, 2020. Of the articles, 20% were double screened using predefined criteria, and 20% of data was double extracted for quality assurance.

Results: A total of 83 articles (80 studies) met inclusion criteria. Of these, 63 studies reported on the impact of social isolation and loneliness on the mental health of previously healthy children and adolescents (n = 51,576; mean age 15.3 years). In all, 61 studies were observational, 18 were longitudinal, and 43 were cross-sectional studies assessing self-reported loneliness in healthy children and adolescents. One of these studies was a retrospective investigation after a pandemic. Two studies evaluated interventions. Studies had a high risk of bias, although longitudinal studies were of better methodological quality. Social isolation and loneliness increased the risk of depression, and possibly anxiety at the time at which loneliness was measured and between 0.25 and 9 years later. Duration of loneliness was more strongly correlated with mental health symptoms than intensity of loneliness.

Conclusion: Children and adolescents are probably more likely to experience high rates of depression and most likely anxiety during and after enforced isolation ends. This may increase as enforced isolation continues. Clinical services should offer preventive support and early intervention where possible and be prepared for an increase in mental health problems.

Key Points:

- 80 articles were included, 63 of which focused on impact of social isolation and loneliness on the mental health
- Included 51,000+ patients
- Loneliness associated with future mental health problems up to 9 years later
- Social isolation and loneliness → increased the risk of depression and possibly anxiety at the time at which loneliness was measured
- Focused on individuals with no mental health problems

Why I Chose This Article:

- Systematic review published last year
- Large population size
- Focused directly on my PICO question
- Focused on period when pandemic/quarantine first began. The before and after effect.

Article 4

Citation:

Xiong J, Lipsitz O, Nasri F, Lui LMW, Gill H, Phan L, Chen-Li D, Iacobucci M, Ho R, Majeed A, McIntyre RS. Impact of COVID-19 pandemic on mental health in the general population: A systematic review. *J Affect Disord.* 2020 Dec 1;277:55-64. doi: 10.1016/j.jad.2020.08.001. Epub 2020 Aug 8. PMID: 32799105; PMCID: PMC7413844.

Type of Study:

Systematic review

Abstract:

Background: As a major virus outbreak in the 21st century, the Coronavirus disease 2019 (COVID-19) pandemic has led to unprecedented hazards to mental health globally. While psychological support is being provided to patients and healthcare workers, the general public's mental health requires significant attention as well. This systematic review aims to synthesize extant literature that reports on the effects of COVID-19 on psychological outcomes of the general population and its associated risk factors.

Methods: A systematic search was conducted on PubMed, Embase, Medline, Web of Science, and Scopus from inception to 17 May 2020 following the PRISMA guidelines. A manual search on Google Scholar was performed to identify additional relevant studies. Articles were selected based on the predetermined eligibility criteria.

Results: Relatively high rates of symptoms of anxiety (6.33% to 50.9%), depression (14.6% to 48.3%), post-traumatic stress disorder (7% to 53.8%), psychological distress (34.43% to 38%), and stress (8.1% to 81.9%) are reported in the general population during the COVID-19 pandemic in China, Spain, Italy, Iran, the US, Turkey, Nepal, and Denmark. Risk factors associated with distress measures include female gender, younger age group (≤ 40 years), presence of chronic/psychiatric illnesses, unemployment, student status, and frequent exposure to social media/news concerning COVID-19.

Limitations: A significant degree of heterogeneity was noted across studies.

Conclusions: The COVID-19 pandemic is associated with highly significant levels of psychological distress that, in many cases, would meet the threshold for clinical relevance. Mitigating the hazardous effects of COVID-19 on mental health is an international public health priority.

Key Points:

- High rates of anxiety, depression, PTSD, psychological distress, and stress
- Reported in general population during COVID-19
- China, Spain, Italy, Iran, US, Turkey, Nepal, and Denmark
- Risk factors → Female, <40 years old, presence of chronic medical condition, unemployment, student, and frequent exposure to social media/news
- Mitigating mental health problems is international public health priority

- 19 studies were included totaling 93,000+ patients
- Threat on mental health in high, middle, and low-income countries

Why I Chose This Article:

- Systematic review
 - Directly focused on my PICO question
 - Included multiple countries outside the US
 - Large population size
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What is the clinical “bottom line” derived from these articles in answer to your question?

The COVID-19 virus is one to be remembered in history. This pandemic has led to unprecedented times to both physical and mental health for the world. Most of the world's efforts and focus was directed towards medical complaints from the virus. Not enough attention was given to the mental health effects this virus has cause for the not just the patients with multiple comorbidities, but for the general population at large. Salari et al., concluded that the virus causes not only physical health concerns but also psychological disorders. Vindegaard et al., concluded lower psychological well-being and higher scores of anxiety and depression were seen compared to before the pandemic. Loades et al., concluded that children and adolescents are more likely to experience high rates of depression and anxiety during and after the isolation period. Xiong et al., concluded that the pandemic is associated with highly significant levels of psychological distress which would meet the threshold for clinical significance. According to the articles mentioned above, the effect of the pandemic on the general population's mental health has increased due to the pandemic. I believe more research needs to be conducted to establish certain psychological interventions that can improve the mental health status of those affected the pandemic. This will provide great benefits for future mental health care planning and for preventative measures for future pandemics.