

# Mental Health and COVID-19: Early evidence of the pandemic's impact

Scientific brief

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## Introduction

The COVID-19 pandemic has had a severe impact on the mental health and wellbeing of people around the world (1). While many individuals have adapted (2), others have experienced mental health problems, in some cases a consequence of COVID-19 infection (3–5). The pandemic also continues to impede access to mental health services and has raised concerns about increases in suicidal behaviour (6).

The aim of this scientific brief is to present current evidence regarding the mental health aspects of the pandemic and inform prevention, response and recovery efforts worldwide. The target audience includes health care providers, researchers, policy-makers and any other stakeholders interested in the evidence on COVID-19 and mental health.

## Key questions

This scientific brief provides a comprehensive overview of the current evidence about:

1. the impact of the COVID-19 pandemic on the prevalence of mental health symptoms and mental disorders
2. the impact of the COVID-19 pandemic on prevalence of suicidal thoughts and behaviours
3. the risk of infection, severe illness and death from COVID-19 for people living with mental disorders
4. the impact of the COVID-19 pandemic on mental health services
5. the effectiveness of psychological interventions adapted to the COVID-19 pandemic to prevent or reduce mental health problems and/or maintain access to mental health services.

Each question is addressed in a dedicated section of the brief. Key findings are highlighted at the end of each section to summarize the data described therein.

## Process and methodology

Because WHO Global Health Estimates for frequency of mental disorders are aligned with Global Burden Disease study estimates, the brief summarizes recent estimates of the Global Burden of Disease 2020 study (7). This brief is also based on evidence from research commissioned by WHO, including an umbrella review of systematic reviews and meta-analyses (published up to October 2021) (8) and an update to a living systematic review (updated to September 2021) (9), and other relevant WHO publications (10–12). Literature searches in commissioned reviews were not restricted by language.

## Research evidence

### Prevalence of mental health problems: GBD 2020

The GBD 2020 (7) estimated that the COVID-19 pandemic has led to a 27.6% increase (95% uncertainty interval (UI): 25.1–30.3) in cases of major depressive disorder (MDD) and a 25.6% increase (95% UI: 23.2–28.0) in cases of anxiety disorders (AD) worldwide in 2020. Overall, the pandemic was estimated to have caused 137.1 (95% UI: 92.5–190.6) additional disability-adjusted life years (DALYs) per 100 000 population for MDD and 116.1 per 100 000 population (95% UI: 79.3–163.80) for AD.

The greatest increases in MDD and AD were found in places highly affected by COVID-19, as indicated by decreased human mobility and daily COVID-19 infection rates. Females were more affected than males, and younger people, especially those aged 20–24 years, were more affected than older adults. Many low- and middle-income countries (LMICs) were also majorly affected.

### Limitations

GBD 2020 prevalence rates are based on statistical modelling from survey data. The variable quality and availability of these data can lead to over- or under-estimates and uncertainties. Additionally, the GBD study identified few studies from LMICs. Therefore, estimates are based largely on data from high-income countries and may generalize less to these settings. Further, the large uncertainties around estimates may also be related to the limited high-quality data from many LMICs (13). Finally, GBD 2020 also has yet to publish data on disorders beyond MDD and AD and concern only the first year of the pandemic.

### Prevalence of mental health problems: umbrella review

From an initial 46 284 records, the umbrella review identified 577 systematic reviews with or without meta-analyses. These were full-text screened for eligibility. Eligible papers were quality assessed according to AMSTAR-2 (14). In total, 480 reviews were excluded for key question one assessing the impact of the COVID-19 pandemic on mental health, retaining 97 systematic reviews of primary studies with longitudinal, cross-sectional or time-series designs. From these, only meta-analyses published in 2021 were selected, to examine the most up to date evidence. In total, 21 meta-analyses were eligible for assessing the impact of the

COVID-19 pandemic on mental health in the general population, 32 in healthcare workers and 26 in other specific populations. Only three meta-analyses gave pooled effect estimates comparing prevalence of mental health problems before to during the pandemic or during implementation of public health and social measures (PHSMs) (15-17). Table 1 provides selected outcomes.

In the general population, Robinson et al (15) reported a small but statistically significant overall increase in mental health symptoms during March-April 2020 compared with pre-pandemic measures (standardized mean change (SMC): 0.10). This declined over time and became non-significant by May-July 2020 (SMC: 0.07). Increases in symptoms of depression and mood disorders remained significant over time (March-April SMC: 0.23 and May-July SMC: 0.20); but those for anxiety did not (March-April SMC: 0.14 and May-July SMC: 0.05) (15). Kunzler et al. (17) also found a moderate symptom increase in the general population for depression (standardized mean difference (SMD): 0.67) and a small but significant increase in symptoms of anxiety (SMD: 0.40). Prati & Mancini (16) found that early implementation of PHSMs in 2020 also led to small but significant increases in symptoms of anxiety and depression in the general population (Hedges' g: 0.17 and 0.15, respectively). An additional 19 meta-analyses examined mental health in the general population through cross-sectional studies; however, their interpretability is limited by their lack of baseline comparison data.

For health care workers, only cross-sectional studies were carried out. One meta-analysis compared cross-sectional data on prevalence of symptoms of anxiety and depression in health care workers during the pandemic with prevalence rates from matched pre-pandemic studies and found no increase (SMD: -0.08 and -0.16, respectively) (17). An additional 31 meta-analyses examined cross-sectional studies of health care workers, but, interpretability of these studies is limited by their methodology.

For other specific populations, only 2 out of 26 eligible meta-analyses reported changes in mental health symptoms based on either longitudinal data or a comparison of pandemic with pre-pandemic cross-sectional prevalence rates from matched studies. The first (15) found no increase in mental health symptoms for people with pre-existing mental disorders (SMC: -0.02); non-significant increases for university students and children and adolescents (SMC: 0.13 and 0.11, respectively); and a significant increase for people with pre-existing physical health conditions (SMC: 0.25). The second (17) also found small but non-significant increases in symptoms of anxiety and depression in populations of patients with COVID-19 (SMD: 0.31 & 0.48, respectively). However, pre-pandemic data was from only four studies while pandemic data was from a mixed population that included both people with COVID-19 and those with physical and mental health conditions. In all other meta-analyses on specific populations, the pooled prevalence rates ranged widely and were difficult to interpret. Two meta-analyses in children and adolescents (18,19) reported relatively similar pooled prevalence rates of elevated levels of depression (1 in 4) and anxiety (1 in 5) and showed that symptoms, particularly depression, were higher in older children and adolescents, among girls, and greater over time.

For specific populations experiencing post-COVID-19 condition, no eligible reviews were identified during the umbrella review. However, after completion, a potentially eligible systematic review and meta-analysis (20) was published that reported pooled prevalence rates of persistent mental health symptoms, such as anxiety and post-traumatic stress symptoms, in COVID-19 patients after an average follow-up duration of 77 days post recovery. Two studies in the review compared control groups to COVID-19 patients and indicated that mental health symptoms were elevated among COVID-19 patients. Across all studies in the review, there was no difference in mental health symptom prevalence among COVID-19 patients based on hospitalization status, infection severity or follow-up duration. To date, many challenges exist in the literature regarding mental health aspects of post-COVID-19 condition, such as limited studies with active control groups to attribute symptoms to COVID-19, inconsistent definitions of post-COVID-19 condition and varying participant selection criteria.

**Table 1. Pooled effect sizes of meta-analyses including a change or comparison with pre-pandemic prevalence**

Variables	Population	Studies (n)	Comparisons (n)	Pooled sample size	Pooled effect*	95% CI change
<b>Mental health problems</b>						
Before vs. during pandemic (15)	Mixed	61	165	55 015	<b>0.11</b>	<b>0.04 to 0.17</b>
Before vs. during pandemic (15)	General		75		<b>0.12</b>	<b>0.04 to 0.19</b>
Before vs. March-April 2020 (15)	Mixed		98		<b>0.10</b>	<b>0.03 to 0.19</b>
Before vs. May-July 2020 (15)	Mixed		67		0.07	-0.02 to 0.16
Before vs. during pandemic (15)	Pre-existing physical		14		<b>0.25</b>	<b>0.07 to 0.43</b>
Before vs. during pandemic (15)	Pre-existing mental		25		-0.02	-0.21 to 0.18
Before vs. during pandemic (15)	University students		40		0.13	-0.01 to 0.27
Before vs. during pandemic (15)	Children/adolescents		38		0.11	-0.03 to 0.26
PSHM vs. no PSHM (16)	General (adult)	20		72 004	<b>0.17</b>	<b>0.07 to 0.26</b>
<b>Anxiety</b>						
Before vs. March-April 2020 (15)	Mixed		29		0.14	-0.02 to 0.30
Before vs. May-July 2020 (15)	Mixed		23		0.05	-0.04 to 0.14
PSHM vs. no PSHM (16)	General (adult)	10			<b>0.17</b>	<b>0.07 to 0.27</b>
Before vs. during pandemic (17)	General	23		49 746 (p) 132 145 (c)	<b>0.40</b>	<b>0.15 to 0.65</b>
Before vs. during pandemic (17)	Health care workers	13		5 508 (p) 22 204 (c)	-0.08	-0.66 to 0.49
Before vs. during pandemic (17)	COVID-19 patients	6		1 845 (p) 12 458 (c)	0.31	-0.07 to 0.69

<b>Depression</b>					
Before vs. March–April 2020 (15)	Mixed	32		<b>0.23</b>	<b>0.11 to 0.34</b>
Before vs. May–July 2020 (15)	Mixed	26		<b>0.20</b>	<b>0.10 to 0.30</b>
PHSM vs. no PHSM (16)	General (adult)	9		<b>0.15</b>	<b>0.01 to 0.30</b>
Before vs. during pandemic (17)	General	25	60 213 (p) 183 747 (c)	<b>0.67</b>	<b>0.07 to 1.27</b>
Before vs. during pandemic (17)	Health care workers	14	2 226 (p) 4 605 (c)	-0.16	-0.59 to 0.26
Before vs. during pandemic (17)	COVID-19 patients	7	1 461 (p) 21 934 (c)	0.48	-0.08 to 1.04

\* Pooled effect = SMC (15), Hedges' g (16) or SMD (17); (p) = pandemic participant; (c) = control participants. **Bold** represents significant effects. PHSM = Public health and social measure.

### Limitations

There is a lack of studies with longitudinal designs. Most of the eligible meta-analyses were rated as low quality, with a high risk of bias. Prevalence rates were also often based on diverse screening tools that were not always validated and use different cut-off scores to reflect mild, moderate or severe symptoms, which makes rates across studies difficult to interpret. Importantly, meta-regression analyses also revealed that studies with high risk of bias often yielded higher prevalence rates. Also, few studies examined mental health problems among people with post-COVID-19 condition and none of the eligible systematic reviews or meta-analyses examined mental health problems among certain groups of interest, such as people living in psychiatric institutions or refugees and other migrants.

### Key findings

- There was a significant increase in mental health problems in the general population in the first year of the pandemic.
- Though data are mixed, younger age, female gender and pre-existing health conditions were often reported risk factors.
- Further research on mental health and COVID-19 among specific at-risk populations and in LMICs is needed.

## Suicide

### Suicide mortality

The update to an ongoing living systematic review of the impact of the COVID-19 pandemic on self-harm and suicidal behaviour (9,21) identified 51 time-series studies or reports comparing national or subnational suicide rates before and during the COVID-19 pandemic to answer key question two of this brief. The most comprehensive assessment carried out an interrupted time series analysis of monthly trends in 21 countries (22). None of these countries reported evidence of an increase in suicide rates in the first four months of the pandemic (April–July 2020); and there was evidence of a fall in rates in 12 countries. By the end of October 2020, areas in another three countries showed a drop in suicide rates (Mexico City, Mexico; Thames Valley, United Kingdom of Great Britain and Northern Ireland; and Victoria, Australia) while there was evidence of suicide rate increases (5–31%) in Vienna, Austria, Japan and Puerto Rico. Other studies reported a drop in suicide mortality in Guangdong Province, China (23), New Delhi, India (24), and the United States of America (25); no change in rates was reported in Victoria Australia (26); and a rise in rates was reported in West Bengal, India (27). There are few studies from LMICs (9,22). Following the update to the living systematic review discussed here, a systematic review of studies from LMICs was published (28) and found only 22 studies, the majority of which were low-quality, with no data from Africa. Time series analyses from seven countries provided the most robust evidence and indicated no change or decreases in suicide deaths. However, of note, two studies published after the update reported national suicide mortality data from two LMICs, Nepal up to June 2021 (29) and India up to December 2020 (30), and demonstrated increases in suicide mortality in those settings.

Studies on sex and age differences showed mixed results. In Japan, the rise in suicide rates after July 2020 was greatest in young women (aged <40 years) (31). Data from the Republic of Korea (32) showed a smaller rate reduction in women than in men. Other studies however found no evidence of sex differences, or reported greater rate reductions in women than men, including in Australia, China, India, Sweden and the United States of America (25,27,33–35). Data from China (23) and Japan (36) indicated that the greatest rises in suicides from July to October 2020 were in children and adolescents aged <20 years. Two studies in two states of the United States of America (33,37) showed that suicide rates in ethnic minority groups did not fall as much as those in Caucasian groups, indicating the pandemic may have disproportionately impacted certain minority groups in those states.

### Acts of self-harm

Fifty-eight studies reported data on the use of health services for self-harm during the pandemic, mostly between March and October 2020. Findings were mixed: 28 studies reported a drop in use of health services for self-harm; 19 reported an increase; and 11 reported no change. All 7 studies rated as high-moderate quality reported decreases in service utilisation during the early months of the pandemic. There was also limited evidence from LMICs. One study from Sri Lanka (38) reported a drop in hospital presentations for self-poisoning of 32% between March and August 2020, compared with pre-pandemic numbers. Four studies included data from 2021, with three reporting an overall drop in service use (39–41) and one reporting an overall rise (42). Three studies (40–42) reported a rise in self-harm presentations among adolescent girls through March 2021 and one study (39) reported a general rise in self-harm presentations among adolescents through May 2021.

## Suicidal thoughts

Many cross-sectional studies have examined prevalence of suicidal thoughts during the pandemic. However, because various questionnaires have been used, results are challenging to interpret. Overall, 38 studies were reviewed in the living review update and either: a) included pre-pandemic or control comparison data; b) included data from three or more survey waves; c) focused on patients with COVID-19; or d) included data on health service use. Results were mixed. Of the 27 studies investigating temporal change, 11 identified an increase in suicidal thoughts and 16 found no change. Cai et al (43) compared suicidal thoughts in 1 173 health care workers working directly with COVID-19-related medical concerns with other age- and sex-matched health care workers and found no evidence of a difference.

Four studies examined the effects of PHSMs on suicidal thoughts. One study in the United States of America (44) found that suicidal thoughts increased significantly during implementation of PHSMs, from 17.6% in April 2020 to 30.7% in June 2020. However, presentations for suicidal thoughts in emergency departments significantly decreased (by 60.6%) during 2020 PHSMs (e.g., 'stay at home' orders) (45). High rates of physical and mental exhaustion in medical workers working directly with COVID-19-related issues (43), loneliness (44) and COVID-19 diagnosis (46) were all associated with higher levels of suicidal thoughts.

## Umbrella review evidence on suicidal thoughts and behaviours

Four reviews (47-50) from the umbrella review were eligible for answering key question two, examining the impact of the COVID-19 pandemic on suicidal behaviours. A systematic review (48) on cross-sectional and case reports/series in Bangladesh suggested that the prevalence of suicidal thoughts in the country had increased during the pandemic. A meta-analysis (47) of 54 mostly cross-sectional international studies (308 596 participants) found increased rates for suicidal thoughts (10.81%), suicide attempts (4.68%), and self-harm (9.63%) during the COVID-19 pandemic compared with pre-pandemic studies. It showed that younger people, women and people living in certain countries were most susceptible (47). However, another meta-analysis (49) including 57 studies of infectious disease outbreaks (including the COVID-19 pandemic) found no evidence of increased self-harm. A systematic review (50) on suicidal thoughts during the pandemic reported a pooled prevalence of 12.1% based on 12 mainly cross-sectional studies in different groups (and a general population rate of 11.5%) that the authors reported was higher than that reported in studies carried out prior to the pandemic. Low social support, physical and mental exhaustion, poor physical health, sleep disturbances, quarantine, loneliness and mental health difficulties were all found to increase the risk of suicidal thoughts (50). In a systematic review published following the umbrella review, additional risk factors in health workers reported were direct contact with COVID-19 patients and poor working conditions, though the quality of evidence was low and there were no studies examining suicidal thoughts and behaviours in social care workers (50).

## Limitations

The living systematic review update covers data primarily from high income countries that reflects the situation in the early in the pandemic. Few studies investigated suicide rates by age, sex, ethnicity, or socioeconomic background. Studies of suicidal thoughts were often based on non-representative samples recruited online. This has implications for prevalence estimates and reported associations. Also, service use studies may not reflect suicidal behaviours in the community and findings may reflect broader pandemic-related disruptions to health service usage. The umbrella review findings are also limited in that there were only two meta-analyses and the reviews were mainly low quality and based on cross-sectional data. Finally, it must be noted that there is often considerable delay between the collection of vital statistics, such as suicide mortality, and their public availability, which limits the timeliness of this brief's findings.

### Key findings

- Data on suicide mortality are mixed and do not clearly indicate a change in rates since the pandemic began.
- Data indicated higher risk of suicidal behaviors among young people.
- Exhaustion (in healthcare workers), loneliness and positive COVID-19 diagnosis increased risk for suicidal thoughts.

## Pre-existing mental disorders and the risk for COVID-19 infection, severe illness and mortality

Nine reviews in the umbrella review were eligible for use in answering key question three, assessing whether people with pre-existing mental disorders are at greater risk for infection, severe illness and death from COVID-19. In general, no consistent evidence was found for an increased risk of COVID-19 infection. One meta-analysis (52) found an increased risk of COVID-19 infection (odds ratio (OR): 1.67; 95% CI: 1.12–2.49) for people with pre-existing mood disorders, anxiety and attention-deficit hyperactivity disorder compared with the general population. However, another meta-analysis (53) comparing people with and without pre-existing mood disorders found no evidence for increased susceptibility to COVID-19 infection (OR: 1.27; 95% CI: 0.73–2.19).

Compared with others, people living with any mental disorder were more likely to be hospitalized due to COVID-19 (OR: 2.24; 95% CI: 1.70–2.94) (54) and have severe illness from COVID-19 (OR: 1.40; 95% CI: 1.25–1.57) (52). These people were also more likely to die after COVID-19 infection (ORs between 1.52 and 2.00) (52, 54-56), especially if they were living with a severe mental disorder, such as psychoses or bipolar disorder. Reviews and meta-analyses also reported an increased risk of greater illness severity (52), hospitalization due to COVID-19 (53) and mortality (54) for people living with pre-existing mood disorders. No significant increased risk was found for people living with anxiety disorders (54). Illness severity and mortality risk in people with mental disorders was greater among younger people (52). Systematic reviews also confirm meta-analytic findings that people living with severe mental disorders are more likely to have severe illness or die following COVID-19 (57-59).



### Limitations

Although most meta-analyses were of moderate or high quality (52,54,55), they were mainly based on primary studies with a retrospective case control or cohort study design. Prospective cohort studies were scarce. Thus, causal implications between the presence of mental disorders and COVID severity or morbidity are limited.

#### Key findings

- Risk of severe illness and death from COVID-19 was higher among people living with mental disorders.
- Among people living with mental disorders, illness severity and mortality increased with younger age and disorder severity.
- There is no consistent evidence that people living with mental disorders were more susceptible to COVID-19 infection.

### Disruptions in mental health services

Both the umbrella review and relevant WHO publications were used to answer key question four regarding disruptions in mental health services during the pandemic. In the third round of WHO's pulse survey on continuity of essential health services during the COVID-19 pandemic (11), over 33% of responding WHO Member States reported ongoing disruptions to mental, neurological and substance use (MNS) services between November and December 2021. School mental health programmes (56%) and alcohol prevention and management programmes (51%) are among the most predominantly disrupted. These results were echoed by the 21 systematic reviews from the umbrella review eligible for use in assessing the pandemic's impact on mental health services. During the pandemic, outpatient appointments were reduced, shortened or postponed; admissions to emergency departments were limited; and there were fewer face-to-face services available (60-67). However, the vast majority of WHO Member States have also reported developing new services and integrating mental health and psychosocial support into COVID-19 response efforts. In the same survey on essential service disruptions, more than 75% of responding WHO Member States reported improvements in the magnitude of disruptions to MNS services compared to earlier in 2021 (11).

Changes in inpatient mental health care during the pandemic were also reported in the literature. Activities like group therapy, external events and family visits were suspended (59,65,68-70) as inpatient services shifted to virtual visits, with a greater focus on self-care, diet and physical activity (59,62,63,68). People in (psychiatric) hospitals or secured settings were also discharged earlier or reallocated to private clinics (60,61,63,65,69), including people with severe mental disorders (9,71,72).

Mental health care providers reported mitigating the disruptions to their services by using digital technologies, with consultations, therapy and follow-up delivered by telephone or through video-conferencing platforms and web applications (59,64,65,71,73,74). In addition, service providers also reassigned staff to help prevent the onset of mental disorders in vulnerable individuals by setting up online psychological support programmes and enhancing community care for health care workers, grieving families and older adults, sometimes in collaboration with governmental and nongovernmental organizations (59,60,63,69,70).

The shift to e-mental health care reportedly enabled more flexible scheduling of services and was reported to be particularly suited to certain groups of people, such as young and financially independent people with their own private space (66,74,75,77). Reported barriers for implementing the shift more broadly included low levels of technological literacy (59-61,64,66,69,70,75) and potential lack of privacy (62,64-66,70,74,76). Other barriers to e-mental health care reported were: lack of provider experience and confidence; inadequate resources and infrastructure; worries about convenience, cost and sustainability (60,62,66,74,76); inadequate or impersonal patient-professional interaction (64-66,75,76); and poor communication about medical prescriptions (60,61). Several reviews (59,66,69,74) reported positive appraisals of the shift to e-mental health care in terms of (cost-)effectiveness, acceptability and convenience, especially for common mental disorders and for outpatient care (59,62,77). However, it must be noted that e-mental health may be less feasible in many countries with limited resources or infrastructure.

### Limitations

In general, systematic reviews were of low quality. Many restricted their searches to English language studies of the first phase of the pandemic, did not use a comprehensive search strategy, and did not account for the broad mixture of research designs. Efficacy was largely based on qualitative analyses of people's experiences (e.g., service users or providers), rather than comprehensive evaluations like randomized controlled trials.

#### Key findings

- Outpatient mental health services were often disrupted during the COVID-19 pandemic, decreasing access to essential care.
- Reports indicated that disruptions were in-part mitigated by shifting services towards e-mental health care.
- Inadequate infrastructure, pre-existing inequalities and low levels of technological literacy were reported e-health barriers.

### Psychological interventions to reduce mental health problems related to the COVID-19 pandemic

Many effective and evidence-based psychological interventions for mental disorders were available for use before the COVID-19 pandemic, including those promoted by WHO, such as the Mental Health Gap Action Programme (78). During the pandemic, efforts were made to adapt existing strategies or develop new interventions to treat or prevent pandemic-related mental disorders and improve resilience. However, only three systematic reviews (two including meta-analyses) in the umbrella review (79-81) were eligible for use in assessing these efforts and addressing key question five. The two meta-analyses concerned 128 to 384 trial participants (all from China) and a wide range of psychosocial interventions for patients with COVID-19 or healthcare workers, including relaxation training, internet-based interventions and guided crisis intervention. Compared with control conditions, and in

line with the pre-pandemic literature (78), these interventions were reported to significantly improve overall mental health (79) and reduce anxiety and depression, specifically (80). The systematic reviews of 125 and 21 studies respectively (79,81), reported findings mainly from (quasi-) experimental trials of interventions aiming to prevent and treat post-traumatic stress disorder (PTSD) or acute stress disorder with individual psychotherapies (e.g., trauma-focused cognitive-behavioural therapy (CBT)) or complementary therapies, peer support groups or, psychological first aid (PFA), in line with WHO's current Living Guidance for Clinical Management of COVID-19 (82). The reviews focused on people affected by infectious disease outbreaks, including COVID-19. Most trials showed improvements in anxiety, depression and distress in response to (digital) interventions, such as stepped care with psychoeducation and CBT, self-help interventions or brief crisis intervention (81).

Implementation was reportedly hindered by a lack of (trained) mental health professionals, especially in LMICs (79,81). Some studies (79,81) also stressed the importance of self-care for professionals working in LMICs. Only a quarter of studies discussed the importance of adapting interventions to local cultures and literacy levels, which may pose a further barrier to use in LMICs.

After the umbrella review was completed, another eligible systematic review and meta-analysis (83) was published. Many of the interventions it tested were delivered remotely (e.g., online CBT or self-help interventions) and were compared with no intervention, usual care or waitlist conditions. Results indicated that psychological interventions had a statistically significant benefit for depression (SMD: -0.40; 95% CI: -0.76–-0.03) and anxiety (SMD: -0.72; 95% CI: -1.03–-0.40).

### Limitations

Overall quality of the eligible reviews and meta-analyses was low with a high risk of bias and heterogeneity. Also, types of interventions differed widely and lacked detail of their components, making it difficult to make meaningful comparisons. The systematic reviews also do not cover research trials done after the first wave of COVID-19 and meta-analyses do not include research trials comparing adapted with non-adapted psychological interventions for mental disorders.

### Key findings

- Many evidence-based psychological interventions for mental disorders were available before the COVID-19 pandemic.
- Psychological interventions studied were effective at preventing or reducing pandemic-related mental health problems, though data is limited.
- There was no data comparing COVID-19-adapted psychological interventions with non-adapted interventions.

### Overall limitations

Many of the studies identified in the development of this review were of low quality or used limited designs. As an example, in a meta-analysis of studies with cross-sectional findings for health care workers, prevalence rates during the pandemic were compared with pre-pandemic rates and suggested no change in mental health problems. Yet, because these studies lacked longitudinal assessments and often assessed outcomes like acute stress or PTSD symptoms, without considering exposure to COVID-19 as a stressor criterion, they may have reported inaccurate conclusions about the prevalence of symptoms related to COVID-19 in these populations (84). There is a need for repeating rigorously designed longitudinal cohort and time series studies to understand the impact of COVID-19 on mental health and suicidal behaviour, particularly in specific vulnerable groups and for a broader range of mental health outcomes (e.g., eating disorders, obsessive compulsive disorder). More evidence from LMICs is also needed, as are cohort studies of people admitted to intensive care or living with post COVID-19 condition. Additionally, much of the evidence concerned 2020 and part of 2021, reflecting the delay between collection and availability of data in published literature.

The evidence also showed that face-to-face mental health service delivery was severely disrupted, at least during 2020-2021, and particularly in outpatient services. However, more evidence on the effectiveness of adapted and remotely delivered psychological interventions for people with mental disorders is needed, particularly compared with non-adapted interventions. Finally, considerably more evidence on the long-term impacts of the pandemic on both health service use and the effectiveness of the mental health care provided in LMICs is necessary.

### Conclusions

Evidence suggests the pandemic and associated PHSMs have led to a worldwide increase in mental health problems, including widespread depression and anxiety. People living with pre-existing mental disorders are also at greater risk of severe illness and death from COVID-19 and should be considered a risk group upon diagnosis of infection. Overall, data indicated that suicide rates in most countries did not rise early in the pandemic. However, there were indications of increased risk in young people and the longer-term impact of the pandemic and associated economic recession on mental health and suicide rates remains a concern, given the well-recognized link between suicidal behaviours and economic hardship (85). Finally, before COVID-19, only a minority of people with mental health problems received treatment. Studies show that the pandemic has further widened the mental health treatment gap, and outpatient mental health services have been particularly disrupted.

WHO recognizes these impacts and continues to view mental health as an essential health service that must be continued during the COVID-19 pandemic (11). Likewise, WHO Member States have emphasized the importance of scaling up mental health services and psychosocial supports as an integral component of universal health coverage and in preparedness, response and recovery for public health emergencies (86). In response to the pandemic, WHO and partners have developed wide range of resources to address mental health needs during the pandemic and continue to work to promote resilience and recovery.<sup>1</sup>

<sup>1</sup> For more information, please visit: <https://www.who.int/teams/mental-health-and-substance-use/mental-health-and-covid-19> and <https://interagencystandingcommittee.org/iasc-reference-group-mental-health-and-psychosocial-support-emergency-settings/iasc-mhpps-products-related-covid-19>

## Plans for updating

WHO continues to monitor the situation closely for any changes that may affect this scientific brief. Should any factors change, WHO will issue an update.

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## References

1. Policy brief: COVID-19 and the need for action on mental health. New York: United Nations; 2020 (<https://unsdg.un.org/resources/policy-brief-covid-19-and-need-action-mental-health>, accessed 6 January 2022).
2. Pierce M, McManus S, Hope H, Hotopf M, Ford T, Hatch SL, et al. Mental health responses to the COVID-19 pandemic: a latent class trajectory analysis using longitudinal UK data. *Lancet Psychiatry*. 2021;8(7):610–619. doi:10.1016/S2215-0366(21)00151-6.
3. Rogers JP, Chesney E, Oliver D, Pollak TA, McGuire P, Fusar-Poli P, et al. Psychiatric and neuropsychiatric presentations associated with severe coronavirus infections: a systematic review and meta-analysis with comparison to the COVID-19

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