Mental health in Europe during the COVID-19 pandemic: a systematic review

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The COVID-19 pandemic caused immediate and far-reaching disruption to society, the economy, and health-care services. We synthesised evidence on the effect of the pandemic on mental health and mental health care in high-income European countries. We included 177 longitudinal and repeated cross-sectional studies comparing prevalence or incidence of mental health problems, mental health symptom severity in people with pre-existing mental health conditions, or mental health service use before versus during the pandemic, or between different timepoints of the pandemic. We found that epidemiological studies reported higher prevalence of some mental health problems during the pandemic compared with before it, but that in most cases this increase reduced over time. Conversely, studies of health records showed reduced incidence of new diagnoses at the start of the pandemic, which further declined during 2020. Mental health service use also declined at the onset of the pandemic but increased later in 2020 and through 2021, although rates of use did not return to pre-pandemic levels for some services. We found mixed patterns of effects of the pandemic on mental health and social outcome for adults already living with mental health conditions.

Introduction

Following the onset of the COVID-19 pandemic on March 11, 2020, mental health was swiftly recognised as an area of concern.[1–4] Potential consequences of the pandemic and associated social restrictions included increase in psychological distress, increase in new onsets of mental health conditions, and worsening of difficulties already experienced by people living with mental health conditions. Pandemic-related service disruption had the potential to exacerbate such effects on mental health. Many studies have investigated aspects of the pandemic's effect on mental health, but systematic reviews have focused only on early stages of the pandemic,[5,6] measures of symptoms in the general population,[7–10] or comparisons between before and after lockdown.[5,11,12] Our aim is to provide a comprehensive overview of the mental health effect of the pandemic in its first 2 years in one major region of the world, to help to inform planning for the continuing response to the COVID-19 pandemic and future emergencies.

We systematically reviewed evidence regarding mental health epidemiology in high-income countries in Europe. We focused on this region because of the similarities between its countries in timing of COVID-19 waves, health service responses, and social restrictions.[13,14] We included studies that made comparisons either before and after the onset of the pandemic or between different timepoints during the pandemic, and that addressed the following three questions: (1) what changes have there been in the incidence or prevalence of mental health problems; (2) what changes have there been to mental distress, symptom severity, social functioning, quality of life, suicidal behaviours, and self-harm among people already living with mental health conditions; and (3) what changes have there been in mental health service use?

Methods

We followed PRISMA guidelines.[15] The research questions and protocol were developed and refined through consultation with a stakeholder working group, including experts by experience, health and social care practitioners, and researchers. The protocol was pre-registered on PROSPERO (CRD42022323723). The review was conducted by the National Institute for Health and Care Research Policy Research Unit (funded to deliver evidence to inform health policy making). The research was initiated in response to a policy maker request for an evidence synthesis to guide forecasts of future service needs.

Search strategy and selection criteria

We searched four electronic databases (MEDLINE, PsycINFO, Embase, and CINAHL) for articles published between March 1, 2020, and February 1, 2022, and four pre-print servers (MedRxiv, PsyArXiv, Wellcome Open Research, and JMIR) for articles registered between March 1, 2020, and March 7, 2022. A combination of keyword and subject heading searches was used. Search terms for mental health conditions including psychotic, affective, anxiety, personality, and eating disorders were combined with terms for COVID-19. We included only longitudinal and repeated cross-sectional studies reporting on high-income European countries (using Organisation for Economic Co-operation and Development criteria).[16,17] No age or language restrictions were applied. We conducted backward reference searching from all included studies, but not forward citation chaining, as doing this with the large number of identified studies would have prevented us from synthesising and delivering evidence promptly. Full search strategies shown in the appendix (pp 1–11).

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See Online for appendix

We included longitudinal or repeated cross-sectional studies comparing timepoints during the COVID-19 pandemic versus prior to the pandemic, or between different points in the pandemic. Studies with samples of people without pre-existing mental health conditions were included (research questions one and three), as well as those meeting cutoffs indicating a clinical condition on validated diagnostic instruments or mental health symptoms measures (questions two and three). We excluded studies with samples defined by having a physical health condition or being COVID-19 survivors or health-care professionals due to the unique nature of their experiences. We did not include samples defined by intellectual disability or neurodevelopmental disorders, dementia, or other organic mental disorder, or substance misuse. Included studies reported at least one of the following: incidence or prevalence estimates (either by diagnostic assessment or proportion meeting the clinical threshold on a validated symptom measure); change in mental distress, symptom severity, social functioning, quality of life, suicidal behaviours, or self-harm in people already living with mental health conditions; or change in mental health service use. We included only studies in which the majority of the sample lived in high-income European countries.

Title, abstract, and full-text screening were carried out on EPPI-Reviewer Web.[18] Seven reviewers (ST, SI, UF, RA, ERF, MS, and NL) independently screened titles and abstracts for studies meeting inclusion criteria. Full texts of potentially eligible studies were retrieved and screened independently by the same reviewers. A second reviewer (NA) screened a random 10% of papers at both stages to validate decisions. Disagreements were resolved through team discussion, and steps were taken to improve agreement.

Data extraction and quality appraisal

A data extraction form was developed and piloted on 10% of included studies using EPPI-Reviewer Web.[18] Data were extracted independently by one of 13 reviewers (NA, PB, RA, UF, ERF, ST, KRS, SMH, MS, SI, PS, NL, and LS-R) and checked for accuracy by a second reviewer (NA, PB, SMH, AG, TP, ST, SI, or ERF). We extracted data on the study design, aims and objectives, dataset, country or region, publication status when the data were extracted, sample size, involvement in study of people with relevant lived experience, population, age, gender or sex, ethnicity, comparison group, symptom or condition measured, setting, primary outcome measures, and associated statistical data. Study quality was assessed using the Newcastle-Ottawa Scale for cohort studies and the adapted Newcastle-Ottawa Scale created for cross-sectional studies by Herzog and colleagues (appendix pp 38–45).[19] Certainty of evidence for each outcome was independently assessed by two of four authors (PB, AG, NA, and HB) using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) system.[20] GRADE guidance was adapted for narrative synthesis according to Murad and colleagues,[21] and it was further adapted according to methodological differences in the studies addressing each research question. Adaptations were discussed and agreed with the working group (appendix pp 46–77).

Data analysis

We analysed changes in prevalence (ascertained through research diagnosis or reaching cutoff score on a clinical measure, a definition used in other reviews focusing on the pandemic)[12] and incidence of mental health problems; mental health symptom severity, social functioning, quality of life, psychosocial outcomes, suicidal behaviours, and self-harm in people with pre-existing mental health conditions; and any mental health service use indicator within crisis and acute mental health services, community mental health and outpatient services, and primary care relating to mental health.

A narrative synthesis was done as the studies were very heterogeneous, especially in terms of timepoints compared and symptoms or services examined. Studies were organised according to their measurement period (pre-pandemic compared with during the pandemic, or different time points over the course of the pandemic), reported outcome, mental health problem, and service type. Studies that measured general psychopathology or mental distress were grouped together as non-specific mental health problems. During the narrative synthesis, we noted whether studies analysed different samples within the same dataset. Data from multiple papers were reported together when the study sample was the same in the different papers.

Results

We identified 7066 records from title and abstract screening. 687 full texts were assessed, of which 149 records met the inclusion criteria. Studies excluded at full-text stage with the reasoning behind exclusions are shown in the appendix (pp 12–37). Pre-print and backward citation searches identified a further 31 records, which gave a total of 177 studies, reported in 180 papers (figure, appendix p 78). 73 (41%) of 177 studies reported changes in prevalence and incidence of mental health problems; 37 (21%) reported studies symptom severity, social functioning, quality of life, suicide behaviours, and self-harm in people with pre-existing mental health conditions; and 76 (43%) mental health service use. Eight (5%) of 177 studies provided information on multiple research questions.

14 (8%) of 177 studies measured mental health outcomes in children and young people aged 6–18 years, and 163 (92%) in adults. Sample sizes ranged from 20 to 24897725, and studies were from 20 European countries: UK (n=46), Italy (n=24), Germany (n=20), Netherlands (n=12), Spain (n=10), France (n=9), Ireland (n=5), Norway (n=6), Austria (n=6), Portugal (n=5), Switzerland (n=5), Sweden (n=3), Belgium (n=3),

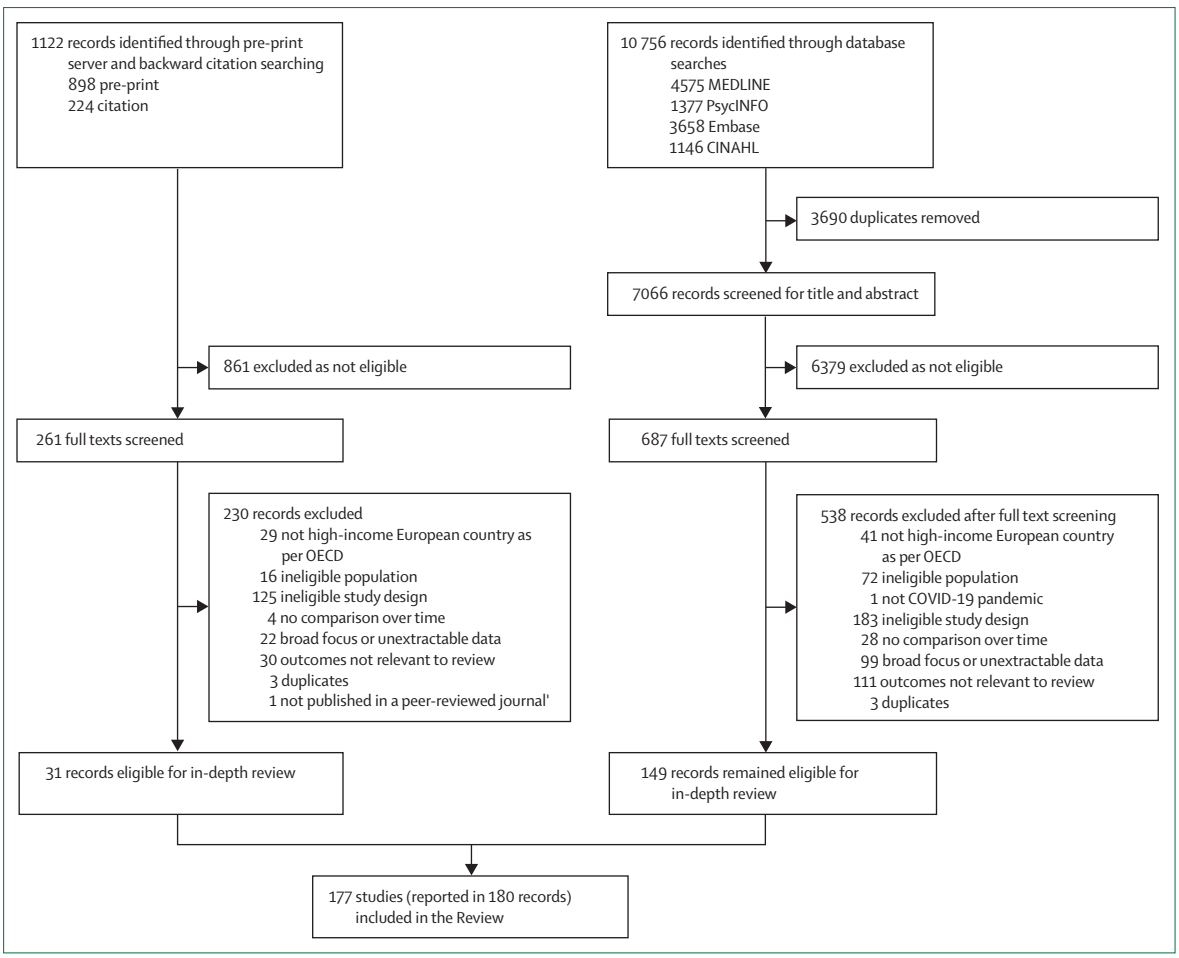

Figure: **PRISMA flow diagram**
OECD=Organisation for Economic Co-operation and Development.

Türkiye (n=3), Denmark (n=2), Poland (n=2), Czech Republic (n=2), Iceland (n=1), Greece (n=1), and Lithuania (n=1). 11 studies reported data from multiple countries. All studies were in English except for three, which were in German.[22–24]

88 (50%) of 177 studies compared mental health outcomes before the pandemic with those during the pandemic, 55 (31%) measured outcomes at different timepoints over the course of the pandemic, and 34 (19%) had both a pre-pandemic and during pandemic comparator. A repeated cross-sectional design was used in 93 (53%) studies, a longitudinal cohort design in 83 (47%) studies, and one study used an open cohort design. Only four (2%) studies reported involving people with relevant lived experience in designing studies or interpreting results. Of the 180 papers, 112 (62%) were rated as high quality, and 68 (38%) as low quality. GRADE certainty of evidence ratings on 103 outcomes were rated high for 15 (15%), moderate for 22 (21%), and low to very low for 66 (64%) studies. Further details of study characteristics (appendix pp 79–259), quality assessments (appendix pp 38–45), and GRADE ratings (appendix pp 46–77) are available.

Concerning the prevalence and incidence of mental health problems before versus during the pandemic, and at different timepoints of the pandemic (research question one), there was evidence of high to moderate certainty that the prevalence of depression, generalised anxiety disorder, and non-specific mental health problems was higher during the pandemic (usually restricted to timepoints in 2020) than before the pandemic,[24–65] with statistically significant increases ranging from 0·25% to 31% (table 1; appendix pp 260–79). Very low-certainty evidence suggested that prevalence of eating disorders and mixed depression and anxiety also increased by 20–21% for eating disorders[67] and 3·9% for mixed depression and anxiety.[41] We found no relevant evidence on other major conditions such as psychosis or bipolar disorder.

Moderate-certainty evidence suggested that prevalence of depression did not change substantially between the onset of the pandemic and the end of June, 2020.[35,36,68,69,70,71]

	Number of studies	Countries	Studies showing prevalence or incidence increased	Studies showing prevalence or incidence decreased	Studies showing prevalence or incidence varied over time	Summary	Certainty of evidence
Prevalence pre-pandemic *vs* during the pandemic							
Depression	30	UK (5), the Netherlands (5), Germany (3), Czech Republic (2), Norway (2), Ireland (2), UK and Ireland (1), Austria (1), Belgium (1), France (1), Iceland (1), Italy (1), Portugal (1), Spain (1), Sweden (1), Switzerland (2)	23/30: 17 showed a significant increase (0·25–31%); 3 showed an increase with no statistical testing; 3 showed non-significant increase	7/30: 3 showed significant reduction; 1 showed a reduction with no statistical testing; 3 showed a non-significant decrease	NA	30 studies reported changes in prevalence of depression during the pandemic compared with before the pandemic. Overall, high certainty evidence suggests that prevalence increased, with 23 of 30 studies reporting an increase and 17 studies reporting a significant increase of between 0·25% and 31%. University students: 3 of 3 studies reported a significant increase of between 8·7% and 27%. Children and young people: 2 of 6 studies reported non-significant decreases in prevalence, 1 of 6 reported a non-significant increase in prevalence, and 3 of 6 reported a significant increase of between 0·25% and 14·9%. Pregnant people: 1 of 2 studies reported an increase in prevalence but without any statistical testing, and 1 of 2 reported a non-significant decrease in prevalence. Mothers: 2 of 22 studies reported a significant increase of between 9% and 14%. Disadvantaged immigrants: 1 of 11 studies reported a non-significant increase. Adults older than 50 years: 3 of 3 studies showed a significant rise of between 12% and 16% (2 datasets).[34-50,52-55,66]	High
Generalised anxiety disorder	15	UK (2), UK and Ireland (1), Netherlands (5), Germany (2), Ireland (1), Czech Republic (1), Norway (1), Portugal (1), Türkiye (1)	11/15: 7 showed a significant increase (0·28–28·2%), 3 showed an increase with no statistical testing; 1 showed non-significant increase	4/15: 1 showed a significant reduction (6·6%); 1 reported a reduction with no numbers or statistics; 2 showed non-significant reduction	NA	15 studies reported changes in prevalence of generalised anxiety disorder during the pandemic compared with before the pandemic. Overall, high certainty evidence suggests that prevalence increased, with 11 of 15 studies reporting an increase and 7 of these reporting a significant increase of between 0·28% and 28·2%. University students: 1 of 2 reported a significant increase of 19·3%, and 1 of 2 reported a significant decrease of 6·6%. Children and people younger than 18 years: 3 of 3 studies reported a significant increase of between 0·28% and 8·1%. Mothers: 1 study reported a significant increase of 6%. Pregnant people: 1 of 2 studies reported a large increase without statistical testing of 28%, and 1 of 2 reported a non-significant reduction in prevalence.[27,29,30,32,35-39,41,45,47,49,52,53,55,56]	High
Non-specific mental health problem	8 (5 different data sets)	UK (4), the Netherlands (2), Norway (2)	6/8: 5 (3 of 5 datasets) showed a significant increase (0·5–13%); 1 showed a non-significant increase	2/8: 1 showed a significant decrease (1·5%); 1 showed a non-significant decrease	NA	8 studies reported changes in prevalence of non-specific mental health problems or psychological distress. Moderate certainty evidence suggests that prevalence increased, with 6 of 8 studies reporting an increase and 5 of these reporting a significant increase of between 0·5% and 13%. Adolescents aged between 13 and 16 years: 1 study reported a 0·7% increase in prevalence. UK Armed Forces Veterans: 1 study reported a non-significant increase in prevalence.[57-59,60-65]	Moderate
Comorbid anxiety and depression	1	UK and Ireland (1)	1/1	0/1	NA	Very low certainty evidence from 1 study suggests that the prevalence of comorbid anxiety and depression increased by 3·9%. University students: 1 study reported a significant increase in prevalence of comorbid anxiety and depression.[41]	Very low
Eating disorders	1	France (1)	1/1	0/1	NA	Very low certainty evidence from 1 study suggests that the prevalence of eating disorders increased by 21·2% in women and 20% in men. University students: 1 study reported a significant increase in prevalence of eating disorders.[67]	Very low

(Table 1 continues on next page)

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	Number of studies	Countries	Studies showing prevalence or incidence increased	Studies showing prevalence or incidence decreased	Studies showing prevalence or incidence varied over time	Summary	Certainty of evidence
(Continued from previous page)							
Prevalence over the course of the pandemic							
Depression							
March to June 2020	5	UK (1), Ireland (1), Germany (1), Italy (1), Spain (1)	1/5 showed non-significant increase	4/5: 1 showed a significant reduction; 1 showed a non-significant reduction; 2 showed a reduction with no statistical testing	0/5	5 studies compared changes in depression over the initial stages of the pandemic. Moderate certainty evidence suggests that there was not a significant reduction in prevalence during this time, although 1 of 5 studies reported a significant reduction of 7%.[35,36,68–71]	Moderate
July to December 2020	11	UK (1), UK and Germany (1), UK & Ireland (1), Austria (1), Belgium (1), France (1), Greece (1), EU (1), Norway (1), Sweden (1), Switzerland (1)	4 /11 showed a non-significant increase	4/11: 2 showed a significant reduction; 1 showed a reduction with no statistical testing; 1 showed a non-significant decrease	3/11: significantly higher prevalence during lockdown periods and significantly lower prevalence during easing of measures	11 studies compared changes in depression during 2020. Moderate certainty evidence suggests that the prevalence of depression varied throughout 2020 but might have reduced, with 2 of 11 studies reporting significant reductions of around 6%. University students: 1 of 2 studies reported lower prevalence of depression when restrictions were eased, and 1 of 2 studies reported a non-significant increase in prevalence. Pregnant people: 1 study reported lower prevalence of depression when restrictions were eased.[33,50,72–80]	Moderate
January to March 2021	8	UK (2), Ireland (1), France (2), Multiple EU countries(1), Poland (1)	2/8: 1 showed significant increase; 1 showed an increase with no statistical testing	3/8: 1 showed a reduction with no statistical testing; 2 showed a significant decrease	3/8: 2 reported lower prevalence during summer when restrictions were eased but the highest during peak COVID-19 periods; 1 reported prevalence was significantly lower in 2021 compared with 2020 but increased during summer 2020	8 studies compared changes in depression between 2020 and early 2021. Very low certainty evidence suggests that prevalence of depression did not significantly change overall, although rates might be slightly higher during later lockdown periods. University students: 1 of 2 studies reported that prevalence was highest during the second lockdown (December to January 2021), and 1 of 2 reported a reduction in prevalence without any statistical testing.[35,36,81–87]	Very low
April to July 2021	2	EU (1), Portugal (1)	0/2	2/2: 1 showed a decrease with no statistical testing; 1 showed a non-significant decrease	0/2	2 studies compared changes in depression prevalence during the later stages of 2021. Low certainty evidence provides unclear evidence of how prevalence changed. Mothers: 1 study reported a small decrease in prevalence with no statistical testing.[88,89]	Low
Generalised anxiety disorder							
March to June 2020	7	UK (1), Spain (2), Ireland (1), Germany (2), Italy (1)	1/7 showed a significant increase	5/7: 2 showed a significant decrease; 2 showed a decrease with no statistics; 1 showed a non-significant decrease	1/7: prevalence rates were higher immediately after bad news such as personal protective equipment shortages	7 studies compared changes in anxiety over the initial stages of the pandemic. Low certainty evidence suggests that there might have been a decline in prevalence during the start of the pandemic (5 of 7 studies reported reductions with 2 of 7 reporting significant reductions of 2·4–11·5%), although prevalence rates might have increased during the first month of lockdown before reducing.[35,36,43,68–71,90]	Low
July to December 2020	11	UK (2), UK and Ireland (1), Austria (1), Belgium (1), Czech Republic (1), France (1), Greece (1), EU (1), Norway (1), Sweden (1)	4/11: 3 showed significant increase; 1 showed non-significant increase	5/11: 2 showed significant reduction, 3 showed non-significant reduction.	2/11: reduced prevalence rates were recorded during non-lockdown periods (summer 2020)	11 studies compared changes in anxiety over the course of 2020. Moderate certainty evidence suggests that there might have been an overall increase in prevalence with 4 of 11 studies reporting an increase and 3 of these reporting a significant increase of 2–3% by November or December, with a decrease in prevalence during the summer of 2020. University Students: 1 study reported increased generalised anxiety disorder prevalence during lockdowns. Pregnant people: 1 reported a non-significant reduction. Parents: one reported a significant decline over the course of 2020. Adults older than 50 years reported a significant increase in prevalence of 2%.[33,52–54,72,74–80]	Moderate

(Table 1 continues on next page)

	Number of studies	Countries	Studies showing prevalence or incidence increased	Studies showing prevalence or incidence decreased	Studies showing prevalence or incidence varied over time	Summary	Certainty of evidence
(Continued from previous page)							
January to March 2021	10	UK (2), Ireland (1), France (2), Poland (2), EU (1), Portugal (1), Switzerland (1)	7/10: 4 showed significant increase; 2 showed an increase with no statistics; 1 showed non-significant increase	3/10: 1 showed significant reduction; 2 showed a reduction with no statistics	0/10	10 studies compared changes in generalised anxiety disorder between 2020 and early 2021. Low certainty evidence suggests the prevalence of generalised anxiety disorder was higher during 2021 than in 2020, with 7 of 10 studies reporting an increase and 4 of these reporting a significant increase of 6–19%. University students: 3 of 5 studies reported a significant increase of 8–19%, 1 of 4 studies reported a reduction in prevalence with no statistics, and 1 of 5 reported an increase with no statistics.[27,35,36,50,81-85,87,91]	Low
April to July 2021	1	EU (1)	0/1	1/1 showed a non-significant reduction	0/1	1 study examined changes only between February and June, 2021, and very low certainty evidence from this study suggests that prevalence of generalised anxiety disorder did not change.[88]	Very low
Non-specific mental health problem							
March to June 2020	2	The Netherlands (1), Spain (1)	0/2	1/2 showed a significant decrease between March and June 2020	1/2 showed increase during April lockdown	2 studies examined changes in prevalence of non-specific mental health problems over the early stages of the pandemic. Very low certainty evidence from these studies suggests that prevalence increased overall although might have varied during this time.[64,65,92].	Very low
July to December 2020	4	UK (3), EU (1)	0/4	4/4: 3 (2 of 3 datasets) showed significant reduction; 1 showed non-significant reduction	0/4	4 studies compared changes in non-specific mental health problems over the course of 2020. Low certainty evidence suggests that the prevalence of non-specific mental health problems reduced between early and later stages of 2020, with all 4 studies on 3 datasets reporting a decrease, and 4 studies (2 datasets) reporting a significant decrease of 6–21% (although 1 study comparing prevalence rates across multiple countries reported that Norway did not see a significant decrease when other countries did).[57,93-95]	Low
January to March 2021	2	UK (1), Germany (1)	1/2 show an increase but with no statistical testing	0/2	1/2 reported increase during late 2020, and decrease during early 2021	2 studies compared changes in general non-specific mental health problems from 2020 to early 2021. Very low certainty evidence suggests that there was no clear shift in prevalence during this time.[96,97]	Very low
PTSD							
July to December 2020	2	UK (1), EU (1)	0/2	2/2	0/2	2 studies compared changes in PTSD over the course of 2020. Low certainty evidence suggests that prevalence might have reduced in late compared with early 2020, with both studies reporting significant decreases of 2·4–4%.[75,95]	Low
January to March 2021	1	Ireland (1)	0/1	0/1	1/1 showed decrease throughout 2020 before increase in 2021	Very low certainty evidence from one study suggests that although prevalence of PTSD might not have differed in 2021 compared with 2020 overall, prevalence might have decreased in later stages of 2020 compared with early stages before increasing in 2021.[35,36]	Very low
April to July 2021	1	EU (1)	0/1	1/1	0/1	Very low certainty evidence from one study suggests that prevalence between early and later parts of 2021 decreased significantly by 5%.[88]	Very low
Panic disorder							
July to December 2020	1	EU (1)	1/1 non-significant report	0/1	0/1	Very low certainty evidence from one study suggests that there was a non-significant reduction in panic disorder symptoms between June and November 2020.[75]	Very low

(Table 1 continues on next page)

	Number of studies	Countries	Studies showing prevalence or incidence increased	Studies showing prevalence or incidence decreased	Studies showing prevalence or incidence varied over time	Summary	Certainty of evidence
(Continued from previous page)							
Incidence before *vs* during the pandemic							
Depression	2	UK (1), Lithuania (1)	0/2	2/2	NA	2 studies compared incidence rates of depression before the pandemic to those during the pandemic. Moderate certainty evidence suggests that there was a significant decline in the incidence of depression diagnoses recorded on medical records, both in comparison to 2018 and 2019 data (n=1, 127·56 per 100 000 reduction), and in comparison to expected rates based on previous years (n=1, 13·8% per 100 000 person-months).[98,99]	Moderate
Generalised anxiety disorder	1	UK (1)	0/1	1/1	NA	Low certainty evidence from 1 study suggests that incidence of generalised anxiety disorder reported on clinical records reduced significantly (26·4% per 100 000 person-months less) in 2020, compared with expected rates.[98]	Low
PTSD	1	Lithuania (1)	0/1	1/1	NA	Low certainty evidence from one study suggests that the incidence of PTSD diagnoses reported on health-care records reduced significantly in 2020, compared with before the pandemic (1·96 per 100 000 reduction).[99]	Low
Incidence over the course of the pandemic							
Depression							
July to December 2020	1	UK (1)	1/1 (Northern Ireland, Scotland, and Wales data)	0/1	1/1 (England data)	Low certainty evidence from 1 study suggests that monthly incidence might have reduced in early stages of the pandemic before returning to pre-pandemic rates by September in England, although in the rest of the UK monthly incidence increased.[98]	Low
Generalised anxiety disorder							
July to December 2020	1	UK (1)	1/1 (Northern Ireland, Scotland, and Wales data)	0/1	1/1 (England data)	Low certainty evidence from one study suggests that monthly incidence might have reduced in early stages of the pandemic before returning to pre-pandemic rates by September in England, although in the rest of the UK monthly incidence increased.[98]	Low
Non-specific mental health problem							
July to December 2020	1	UK (1)	0/1	1/1	0/1	Low certainty evidence from one study suggests that monthly incidence reduced between April and July 2020, from 28·6% to 9%.[93]	Low

NA=not applicable. PTSD=post-traumatic stress disorder.

Table 1: **Prevalence and incidence of mental health problems compared with before, and over the course of the pandemic**

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Low-certainty evidence suggested that generalised anxiety disorder prevalence reduced during this time (2·4–11·5% decline)[35,36,43,68,69,70,71,90] and very low-certainty evidence suggested prevalence of non-specific mental health problems varied over time but might have increased overall between March and June, 2020.[64,65,92]

As the pandemic continued, there was moderate-certainty evidence for an overall slight increase (2–3%) in generalised anxiety disorder from the early months of the pandemic to second half of 2020, but with a dip in prevalence during summer months.[33,52–54,72,74–80] There was low to moderate certainty evidence that depression (around 6% decline), non-specific mental health problems (6–21% decline), and post-traumatic stress disorder (PTSD; 2–4% decline) prevalence reduced between the early pandemic and the end of 2020.[33,50,57,72–80,93–95]

The few studies comparing later in the pandemic (2021) to earlier (2020) found moderate-certainty evidence of little change in the prevalence of depression or non-specific mental health problems between 2020 and 2021.[35,36,81–89,96,97] Evidence of low to very low certainty suggested an increase in generalised anxiety disorder rates (6–19%) and decreased PTSD prevalence (5% decrease reported in one study).[27,35,36,50,81–85,87,88,91]

Studies on sub-populations, including children and young people,[24,26,37,58] university students,[27,50,51] and mothers and pregnant people,[29,33,48,55,56] also reported increased prevalence of all mental health problems during the pandemic compared with before its onset. The exceptions were anxiety disorders in students (one of two studies reported a significant decrease),[41] and depression in children and young people (two out of six studies reported a decrease).[32,39] Studies of university students reported higher prevalence of depression and generalised anxiety disorder during lockdown periods than when restrictions were eased, both in 2020 and 2021.[72,85] One study reported that prevalence of depression and generalised anxiety disorder among parents reduced by July 2020, compared with earlier pandemic timepoints.[77] One study on an older adults goup with mean age of 67 years reported a significant increase in prevalence of generalised anxiety disorder by December 2020.[54]

Estimates of incidence based on service data found evidence of low to moderate certainty that the incidence of depression, generalised anxiety disorder, and PTSD showed statistically significant reductions after the onset of the pandemic compared with before the pandemic.[98,99] Low-certainty evidence also suggested that the monthly incidence recorded by mental health services of depression, generalised anxiety disorder, and non-specific mental health problems reduced further during 2020.[93,98]

For people already living with mental health conditions (research question two), data are shown in the appendix on changes in symptoms during compared with before the pandemic (pp 279–291) and at different time points of the pandemic (pp 291–308). Among adults living with mental health conditions at the onset of the pandemic, evidence of moderate to high certainty suggested no significant change in general psychopathology and mental distress symptoms,[23,57,100,101] significant improvement in depressive symptoms,[102–106] and mixed findings regarding changes to anxiety and eating disorders symptoms[100,102,105,106] after the onset of the pandemic. Very low to low certainty evidence suggested significant worsening in PTSD symptoms and mixed findings for changes to schizophrenia and bipolar symptoms among adults during the first half of the pandemic compared with before the pandemic.[101,103,105]

Comparing timepoints during the pandemic, moderate-certainty evidence suggests no significant change in depressive symptoms, and mixed findings regarding obsessive-compulsive disorder symptoms in adult clinical populations during the first half of 2020.[70,107–112] Low-certainty evidence suggested no statistically significant change in schizophrenia and bipolar symptoms, but statistically significant improvements in general psychopathology during the early pandemic period.[108,111–113] Evidence was mixed and of low-certainty on whether eating disorder and anxiety symptoms changed in adult clinical populations during the first half of 2020.[70,107,108,111,112]

Evidence from studies comparing mental health symptoms among adults between the first and second half of 2020, suggested with moderate to high certainty that general psychopathology and mental distress, and symptoms of depression, schizophrenia, and bipolar disorder did not change significantly.[103,104,114–117] Findings regarding PTSD were mixed.[114,115] Low-certainty evidence suggested no significant change in anxiety symptoms over this period, but findings regarding obsessive-compulsive disorder symptoms were mixed.[116,118]

No statistically significant change in anxiety and eating disorder symptoms among adults was found during the pandemic between June 2020, and January 2021; the evidence was of very low certainty.[119] Findings on changes in schizophrenia and bipolar symptoms between October 2020, and February 2021, were mixed and the evidence was of very low certainty.[120] Moderate-certainty evidence indicated no statistically significant changes in general psychopathology and mental distress, and there was very low to low certainty of no statistically significant changes in anxiety and PTSD symptoms between March or July 2020, and June or July 2021, among adults.[121,122]

Very low-certainty evidence indicated significant worsening in obsessive-compulsive disorder, general psychopathology, and mental distress among children and young people already living with mental health conditions after the onset of the pandemic.[123,124] Low-certainty evidence suggested no significant change in symptoms of depression and anxiety among children and young people with mental health conditions in comparisons with pre-pandemic, just after pandemic onset, and December in 2020.[32] However, low-certainty evidence also suggested significant worsening in

	Number of studies	Countries	Summary	Certainty
Crisis and acute mental health care before *vs* during the pandemic				
Inpatient: adults				
March to June 2020	21	Portugal (2), Italy (6), UK (6), Germany (2), Spain (2), Denmark, France, multiple countries	Adult inpatient service use decreased in the early pandemic period compared with before the pandemic. 12 studies reported decrease in measures of admissions (5 reported that these changes were significant), although 8 studies reported increases in measures of admissions (5 reported that these changes were significant). Despite indications that admissions decreased, there was a suggestion that more severe inpatient cases increased during the early pandemic: the types of admissions in which increases were found largely referred to compulsory admissions, hospitalisation after presentation to emergency departments, and psychiatric intensive care unit hospitalisation. Admissions decreased by between 11% and 43%. Only one percentage statistic for increase of admissions was reported (15·7%).[22,129,132–150]	High
July to December 2020	9	Germany (2), Italy (2), France, Italy, Denmark, UK, Spain, Türkiye	Adult inpatient service use decreased over 2020, pandemic period compared with before the pandemic. 8 studies found a decrease in admissions (2 reported that decreases were significant, reporting decreases in admissions of 3–41·6%). No study found an increase in the number of admissions overall. Increases were found by 4 studies in length of stay, number of section 136 Mental Health Act assessments, consultations, and proportion of all psychiatric admissions as a function of all inpatient admissions. Unlike earlier in 2020, results were more mixed later in the pandemic for compulsory admissions: 1 study reported a decrease in involuntary admissions, and another an increase in the proportion of admissions that were involuntary.[124,130,141,145,151–155]	High
January to March 2021	3	UK, Denmark, multiple countries	There was slightly stronger indication of a reduction than an increase in adult inpatient service use in 2021 compared with pre-pandemic periods. 2 studies reported a decrease in indicators of admissions (rate of admissions, and the perception of change in admissions reported by heads of psychiatry). 1 study reported a significant 5% decrease in the rate of inpatient admissions, but the results were mixed as another study reported an increase in the proportion of referred patients that were admitted and a number of patients on the waitlist.[129,143,156]	High
Inpatient: paediatric				
March to June 2020	3	Spain (2), France	Paediatric inpatient service use decreased in the early pandemic compared with before the pandemic. All studies found a decrease in admissions (1 study reported that this was significant; admissions decreased by 18–42%), and 1 found a decrease in length of hospital stay.[157–159]	High
Emergency department and walk-in services: adults				
March to June 2020	27	Portugal (2), Switzerland, Italy (7), UK (9), Belgium, Spain, Portugal, Germany (2), Ireland (2), France, Türkiye	Mental health-related use of adult emergency department and walk-in services decreased in the early pandemic period compared with pre-pandemic rates. 22 studies reported decreases in service use indicators including presentations, consultations, assessments, referrals, liaison psychiatry contacts, and referrals (11 studies reported a significant decrease, and decreases in psychiatric presentations ranged from 13·5% to 58%). The decrease was most pronounced in the early lockdown period (reported by 4 studies), and 1 study including both lockdown and post-lockdown periods in 2020, found the decrease was greater in the lockdown than post-lockdown period. 7 studies reported increases in measures pertaining to service use (4 studies reported that these increases were significant). However only 2 increases were found in psychiatric presentations to emergency departments (0·53–56%) and in psychiatric visits as a proportion of all emergency departments visits and the number of repeat visits within 1 month.[130,132,134,136–140,142,146,147,150,160–174]	High
July to December 2020	5	Italy (2), Germany, UK, Türkiye	Mental health-related use of adult emergency department and walk-in services decreased during 2020, compared with pre-pandemic periods. 4 studies reported decreases in service use (12–16% reduction in psychiatric presentation numbers to emergency departments; 1 of the decreases reported was reported as significant). Decreases were found in total and daily psychiatric presentations, liaison psychiatry referrals, and consultations. 1 study reported an increase in service use measures, including in the number of urgent psychiatric consultations overall, daily, and by telephone (the daily and telephone measures were reported as significant).[22,130,152,175,176]	High
Emergency department and walk-in services: paediatric				
March to June 2020	4	France, Spain (2), UK	Mental health-related use of paediatric emergency department and walk-in services decreased in the early pandemic periods compared with before the pandemic. 3 studies found decreases in psychiatric presentations including for self-harm and suicidality, with decreases ranging from 36% to 61%, but 1 study found a significant increase in presentations by 164·5%.[157,177,178,179]	Moderate
July to December 2020	1	France	1 study found an increase in emergency department admissions due to suicide attempts of 80% in November and December, 2020, compared with November and December, 2019.[177]	Very low
January to March 2021	1	France	1 study found an increase of 202% in emergency department admissions due to suicide attempts in March and April 2021, compared with March and April, 2019.[177]	Very low
Community-based crisis care				
March to June 2020	2	UK	Evidence suggests a reduction in use of community-based crisis care in the early pandemic period compared with pre-pandemic rates. 1 study found a decrease of 5–10% in referrals, and another found a 24·9% decrease in total contacts and a 26·4% decrease in overall caseloads, and identified a shift from face-to-face to virtual contacts, with a 102% increase in virtual contacts.[148,164]	Moderate

(Table 2 continues on next page)

	Number of studies	Countries	Summary	Certainty
(Continued from previous page)				
Trauma and resuscitation rooms				
March to June 2020	3	Austria (2), UK	All studies identified an increase in mental health-related admissions to trauma and resuscitation rooms in the early pandemic period compared with before the pandemic. These increases were found in the proportion of admissions due to suicide attempts, proportion of admissions with a psychiatric diagnosis, and number of admissions due to suicide attempts. 2 studies reported these increases were significant.[180–182]	Low
Crisis and acute mental health care over the course of the pandemic				
Inpatient: adults				
March to June 2020	1	Germany	1 study found daily admissions increased in later lockdown compared with early lockdown, and that the length of hospital stay significantly decreased from early to late lockdown.[183]	Low
July to December 2020	2	Italy, Spain	Evidence was mixed regarding how service use changed after lockdown. 1 study found admissions significantly decreased post-lockdown compared with during lockdown, but the other found they increased, although this change was not significant.[145,184]	Very low
January to March 2021	2	Italy, multiple European countries	Studies indicated an increase in inpatients as the pandemic progressed into 2021 (78% in 1 study). A slight decrease in length of hospitalisation was also reported in the second wave *vs* first wave.[141,143]	Very low
Emergency department and walk-in services: adults				
March to June 2020	4	UK (2), Portugal, Spain	2 studies showed visits decreased during March, 2020 (1 study reported this as significant). After the end of March, increases were observed in emergency visits and referrals in 2 studies (1 reported as significant). In comparison with lockdown, 1 study showed visits increased by 21% after lockdown. [138,164,171,185]	High
July to December 2020	3	Switzerland, Italy, UK	3 studies reported an increase in service use based on the number of consultations or liaison referrals after lockdown compared with the early lockdown, with the increase ranging from 21% to 56·9%. 1 study reported the proportion of all emergency department activity reported to liaison psychiatry services increased from March to May, but decreased from May to August, 2020.[176,184,185]	High
Emergency department and walk-in services: paediatric				
January to March 2021	1	France	There was an increase in emergency department admissions due to suicide attempts from March and April 2020, onwards. By March and April 2021, these admissions (n=48·7) had increased by 524% compared with March and April, 2020 (n=7·8).[177]	Very low
Community mental health and outpatient services before *vs* during the pandemic				
Adults of working age				
March to June 2020	11	UK (7), Italy, Netherlands, Spain (Balearic Islands), Denmark	Mental health and outpatient services for adults of working age was decreased in the early pandemic compared to pre-pandemic. All studies reported a decrease in service use measures (4 reported these were significant; decreases in referrals ranged from 24% to 75·3%) including number of patients, patients attending follow-up, referral rates, referrals to Improving Access to Psychological Therapies, number of patients accessing these services, face-to-face contacts, home visits, caseloads, assessments, daily caseloads,and self-reported contact with a mental health professional or webpage. Results were mixed as 5 studies also reported an increase in some service use indicator; however, in 3 studies these increases (of 147–157%) were mostly found in virtual contacts, and the only significant increase was found in video consultations, although increases were reported in self-referrals to Improving Access to Psychological Therapies by patients from minoritised backgrounds after the fourth week of lockdown, consultations, and daily caseloads.[71,98,129,140,48,149,164,186-188]	High
July to December 2020	7	UK (3), Italy (2), Germany, Denmark	Use of community mental health and outpatient services for adults of working age increased during 2020, compared with pre-pandemic use rates. 6 studies reported increases (1 reported as significant) in measures of service use including online self-referrals, appointments, referrals, and remote consultations. 1 study reported a percentage change in mental health service utilisation (20% increase). 3 studies reported a decrease in service use over the pandemic in 2020, compared with pre-pandemic rates (1 reported as significant), for referrals and self-reported use of mental health professionals.[129, 152,167,175,186,189,190]	High
January to March 2021	1	Denmark	1 study found referral rate in the second lockdown was non-significantly higher than before lockdown.[129]	Moderate
Children and adolescents				
March to June 2020	5	UK (3), Italy, Sweden	Use of community mental health and outpatient services for children and adolescents decreased in the early pandemic period compared with before the pandemic. All studies found decreases in indicators of service use (2 reported that decreases were significant), with decreases of contacts ranging from 4·36% to 12%, including in referrals, daily caseloads, total contacts, face-to-face contacts, proportion of patients undergoing neuropsychiatric interventions, and contact with mental health services in children whose schools were closed. 2 studies reported increases: 1 reporting a shift to virtual contacts (126% increase in virtual contacts, 86% decrease in face-to-face contacts), and the other reporting a marginal increase in admissions.[125,140,149,164,191]	Moderate
July to December 2020	2	Italy, Sweden	Use of community mental health and outpatient services for children and adolescents was decreased over 2020, compared with before the pandemic. Both studies reported decreases in indicators of service use compared with pre-pandemic rates, both in the proportion of patients undergoing psychiatric and psychopharmacological treatment, and in contact with mental health services in children whose schools had been closed earlier in the pandemic, even after in-person teaching resumed (3·55% decrease).[125,191]	Low
January to March 2021	1	Sweden	1 study found a persistent decrease (5·23%) in contacts with mental health services in children whose schools had been closed earlier in the pandemic in 2021, when in-person teaching had been resumed.[191]	Low

(Table 2 continues on next page)

	Number of studies	Countries	Summary	Certainty
(Continued from previous page)				
Older adults				
March to June 2020	5	UK (4), Germany	Evidence suggests a decrease in use of community mental health and outpatient services for older adults in the early pandemic compared with before the pandemic. All studies reported a decrease in measures of service use (4 reported that these were significant), including referrals, consultations (5–18% decrease), recognition of incident diseases (16% decrease), daily caseloads (6–14% decrease), total assessments (20% decrease), admissions (27% decrease), and referrals (39% decrease).[147,149,164,192,193]	Moderate
July to December 2020	1	Netherlands	1 study found that use of mental health professionals by older adults was significantly decreased in the pandemic over 2020, compared with pre-pandemic rates.[194]	Low
Community mental health and outpatient services over the course of the pandemic				
Adults of working age				
January to March 2021	1	Austria	1 study found psychotherapists reported increased patient numbers overall (by 77·2%), and increased number of patients treated in-person in 2021, compared with the early pandemic in 2020. The number treated over telephone decreased in 2021.[195]	Very low
Children and adolescents				
March to June 2020	1	UK	1 study found a non-significant increase in referrals over the course of lockdown.[164]	Low
July to December 2020	1	Italy	1 study reported a 48% reduction in the number of patients undergoing psychopharmacological treatment in August and September, 2020, compared with during lockdown.[125]	Very low
January to March 2021	1	Multiple European countries	1 study found that a greater proportion of the heads of children and young people psychiatric services reported that referrals and outpatient numbers had increased in 2021, compared with at the start of the pandemic. However, a greater proportion of them reported that outpatients had decreased in 2021, since the start of the pandemic, than reported that outpatients had increased.[143]	Very low
Older adults				
March to June 2020	1	UK	1 study found a non-significant increase in referrals over the course of lockdown.[164]	Low
Primary care before *vs* during the pandemic				
General practitioners				
March to June 2020	1	UK	1 study found mental health-related use of primary care reduced in the early pandemic compared with pre-pandemic rates. First diagnoses of common mental health problems reported by general practitioners decreased significantly by 50%, and related first prescriptions was also lower in this pandemic period.[196]	Very low
July to December 2020	3	UK (3), Norway	Results were mixed for studies investigating mental health-related use of primary care over 2020, compared with pre-pandemic rates. 2 studies found decreases (31–46% significant decrease in consultations, and 20–47% decrease in contacts) and 2 studies reported increases (17% increase in psychological presentations and 6% in prescriptions, both statistically significant).[197,198,199]	Moderate
Primary care over the course of the pandemic				
General practitioners				
July to December 2020	2	UK	Both studies found that after the initial drop in contacts and consultations, these rates increased (1–2% per week) after the end of March until the end of the studied periods (July 2020) [198,199]	High

Table 2: **Service use outcomes compared with before, and over the course of the COVID-19 pandemic**

depressive and anxiety symptoms among children and young people from just after pandemic onset to December 2020.[32] Overall, findings regarding changes in general psychopathology and mental distress over this timeframe in children and young people with mental health conditions were mixed, with conclusions of very low-certainty.[125]

Moderate-certainty evidence suggested significant worsening in social functioning among adult clinical populations after the pandemic onset versus before the pandemic.[105,106] Comparing timepoints during the pandemic, there were indications of improvement in psychosocial outcomes—such as psychosocial impairment—during the first of half of 2020 (very low-certainty evidence).[126] Overall, low-certainty evidence suggested significant improvements in psychosocial burden and negative psychosocial effect of pandemic restrictions in later 2020 versus just after pandemic onset.[117,127] Social functioning and quality of life did not change significantly during this time, or between 2020 and 2021 (very low-certainty evidence).[118,122]

Overall, moderate-certainty evidence indicated that suicidal behaviour (measured by clinical records) did not significantly change between before the pandemic and at various timepoints during it, in 2020 and 2021, among clinical populations of all ages.[128–130] However, there was low-certainty evidence of a reduction in self-harm measured through clinical records (in a sample aged 10 years and older) early in the pandemic versus pre-pandemic (low-certainty).[98]

Around the onset of the pandemic, self-reported ideation was more frequent, but self-reported self-harm less frequent among clinical populations than at later timepoints before July 2020 (very low-certainty

evidence).[70,131] Low-certainty evidence comparing pandemic timepoints before July, 2020, with later in 2020, suggested fluctuating rates of case note-reported self-harm.[98]

Concerning service use outcomes during versus before the pandemic, and at different time points during the pandemic, overall, moderate to high-certainty evidence suggests that the use of critical and acute mental health care services decreased in the early pandemic period versus before the pandemic (research question three; table 2, appendix pp 308–325). This decrease included mental health inpatient care (adult admissions: 11–43% reduction, paediatric admissions: 18–42% reduction), mental health presentations to emergency department and walk-in services (adult presentations: 14–58%, paediatric presentations: 36–61%), and community-based crisis care.[109,129,130,132–149,157–174,177–180,183] A decrease below pre-pandemic service use levels was also found for community mental health and outpatient services for adults of working age (referrals: 24–75% reduction; high-certainty evidence),[71,98,129,140,147–149,164,186–188] children and young people (total contacts: 4·36–12% reduction; moderate-certainty evidence),[125,164,140,149,191] and older adults (consultations: 5–18% reduction; moderate-certainty evidence),[164,147,149,192,193] and for mental-health related contacts in primary care (very low-certainty evidence).[196] Across community mental health services, a shift from face-to-face to remote contacts was reported in the first half of 2020.[140,148,187] An exception was an increase in mental health-related admissions to trauma and resuscitation units in the first half of 2020, which was three to ten times higher (low-certainty evidence) than before the pandemic.[180–182] Likewise, despite an overall decrease in use of adult mental health inpatient services, there were indications that more severe difficulties (eg, resulting in compulsory hospitalisations) increased.[180–182]

After an initial decrease, mental health-related use of adult emergency departments (high-certainty evidence), adult inpatient mental health care (low-certainty evidence), and community mental health services for children and young people and older adults (low-certainty evidence) increased by June, 2020, compared with just after the onset of the pandemic.[138,164,171,183,200] Mental health-related contacts in emergency departments and primary care was increased in later 2020, compared with earlier in the pandemic (high-certainty evidence).[160,176,184,198,199] The use of community services for children and young people decreased in 2020, after the pandemic onset but was greater in 2021, than earlier in the pandemic (very low-certainty evidence).[125,143] Use of all these services remained below pre-pandemic levels at later timepoints in 2020: in adult mental health inpatient care and emergency departments (inpatient admissions: 3–42% lower; mental health eating disorders presentations: 12–16% lower; high-certainty evidence), and in community mental health and outpatient services for children and young people and older adults (low-certainty evidence).[22,125,129,130,141,145,151-155,175,176,191,194] Service use was still below pre-pandemic levels in 2021, for adult inpatient care (high-certainty evidence) and children and young people's community services (low-certainty evidence).[129,143,156,191]

Conversely, the use of community mental health and outpatient services for adults of working age (moderate to high-certainty evidence) and paediatric (very low-certainty evidence) emergency department and walk-in services reached higher levels than pre-pandemic later in 2020 and 2021.[129,151,152,175,177,186,191,192] Findings concerning primary care service use (moderate-certainty evidence) at later timepoints were mixed.[197–199]

Discussion

We identified 177 studies from 20 high-income European countries comparing mental health and mental health-service use outcomes either before and during the pandemic, or over the course of the pandemic. Most studies reported that prevalence of mental health problems including depression, anxiety, and non-specific conditions rose after the onset of the pandemic in general population samples. This observation could be interpreted as an acute response to a global event that caused widespread disruption, fear, financial hardship, and grief. Governmental restrictions and lockdowns were most stringent during the beginning of the pandemic.[201] Lockdowns might have augmented known risk factors for mental ill-health, such as unemployment and social isolation, while disrupting access to face-to-face professional and social support.[2,202,203]

These rises were modest in most cases, however, and by late 2020, the increase in prevalence of mental health problems appears to have slowed. This is consistent with a meta-analysis of longitudinal studies, which found prevalence was higher than before the pandemic in March and April, 2020, but that it no longer was in July, 2020.[10] That meta-analysis,[10] however, only compared the worldwide prevalence of mental health problems before and early in the pandemic, whereas we have examined changes as the pandemic progressed in more detail in high-income European countries.

Studies using health-care records consistently reported fewer incident diagnoses of mental health problems after the onset of the pandemic than before the pandemic, which is consistent with our previous findings based on data from early in the pandemic[1] and with a 2022 systematic review comparing psychiatric service use before and during the pandemic among children and young people.[204] Early in the pandemic, concerns over risk of infection appear to have prevented some from seeking in-person support.[1,203,205] This disparity between increased prevalence of mental health problems and reduced service use suggests that the treatment gap in addressing mental health problems[206] in the population might have increased, with potential long-term repercussions. As well

documented elsewhere,[207–209] we found that service providers adopted telemental health to ensure continuity of service delivery early in the pandemic. However, for some people, access to these services was challenging, for example due to poor digital connectivity and inadequate private space.[207,210]

After the initial substantial drop observed, service use began to rise but often remained below pre-pandemic levels. However, later in 2020 and in 2021, service use in paediatric emergency services (mental health presentations) and community mental health services for adults of working age rose above pre-pandemic levels. Given sparse research at timepoints beyond 2020, it is unclear whether these trends continued, and they should be cautiously interpreted given long-term increases in demand for mental services already observed before the pandemic.[211–213]

We found no clear pattern of change in mental health symptom severity and associated outcomes in adults with pre-existing mental health conditions. Most studies showed either no significant change or different findings for different outcomes, with generally low certainty of evidence, partly as each outcome was the focus of only a few studies. The absence of a clear worsening of most symptoms contrasts with qualitative reports from people with pre-existing mental health conditions on the negative effects of the pandemic on their mental health, for example because of disrupted treatment and routines, and increased social and economic stressors.[214] Our mixed and sometimes surprising results might be understood in relation to large variations in experiences of people living with mental health conditions, with the effects of the pandemic varying by condition, the extent to which people were able to continue to connect with formal and informal support, and the interactions of the pandemic's effects with pre-existing social isolation and adversity.[3,215] Some people reported some positive consequences, including a sense of a shared societal experiences, reconnecting with family and friends at the onset of the pandemic, mobilising existing reserves of resilience, peer support, and the absence of some pre-pandemic stressors.[1,203] An independent commentary on our research process and findings is provided by co-authors of the paper who contributed from the perspective of their experience of living and supporting others with mental health conditions (panel).

In children and young people with some pre-existing mental health conditions, we found evidence that symptoms of obsessive-compulsive disorder, general psychopathology, and mental distress significantly worsened at the start of the pandemic in 2020. This contrasted with reduced service use, suggesting mental health needs were not met. This is in line with findings of a review on increases in depression, anxiety, and psychological distress after the onset of the pandemic,[217] with three studies reporting these were greater for children and young people who were already living with a mental health condition before the pandemic. Our Review found some evidence of increased depression and anxiety within this clinical population. Exacerbated symptoms of some mental health problems among children and young people might have been due to school closures, disruptions to daily routines, reduced access to mental health services, and less life-acquired resilience,[217–219] but the low quality of evidence on these observations needs to be noted.

Panel: Lived experience commentary by SJe, KM, and PS

We have attended the research team's regular meetings, and the lead researcher arranged additional meetings to help us make sense of the large amount of data and conflicting information. With little hands-on involvement in the project, and our limited experience of systematic reviews, we found this study particularly challenging to follow and comment on. Throughout, our questions returned to our own experiences, and those heard through our peer networks and from people interviewed in our previous studies.[3,214]

Only four of the 177 original studies reported on lived experience involvement in their research. In their haste to understand the COVID-19 response, academic researchers reported data from use of services, but we could not see evidence of them having asked people with lived experience, carers, or their wider communities for input into the design or interpretation of the studies. Involvement in these earlier individual studies might have alerted those researchers to missing perspectives, such as the insights related by peer supporters when they described their work as becoming more serious in response to pandemic-related experiences of loss.[209]

There are multifarious findings of varying degrees of certainty in the quantitative studies reviewed. However, these studies tell us little about why the changes happened or about the trajectory of people who did not or could not access statutory services. Similarly, reporting of service contacts data is no indicator of the quality or outcomes of those contacts. Our experience is of services becoming inaccessible, and access through emergency departments that could have been avoided if other community services had been available or readily accessible. Alternatives such as digital services did not work for everyone and were often offered with little other choice; pressures in one part of the system created knock-on effects elsewhere. There were very little demographic data reported in the original studies or consideration of differential sub-group effects, despite the recognised disproportionate effect of the pandemic on marginalised communities.

A cautious approach to drawing conclusions from the conflicting and low certainty findings is needed. However, this study is valuable in highlighting the complex effects of the pandemic, uncertainties and gaps in knowledge, points of potential concern, and the necessity of learning from qualitative approaches, experiential perspectives, and the peer support approaches, which filled many of the gaps when traditional services were harder to reach.

To our knowledge, our Review offers the most comprehensive summary of epidemiological patterns in mental health and mental health care in Europe during the COVID-19 pandemic to date. The Review encompasses both the general population and those with pre-existing conditions, and allows a comparison of changes in prevalence of mental health problems and mental health service use. Use of the GRADE framework to assess quality of evidence for each outcome and its integration within our narrative synthesis adds robustness to our conclusions.

Our Review has several limitations. Studies included for research question one often used cutoffs on symptom measures rather than validated diagnostic instruments to measure prevalence, possibly inflating estimates. Measurement of incidence and some other outcomes such as self-harm was generally based on service contacts, with reported results likely to reflect reduced service provision and impediments to seeking help during the pandemic. We looked at broad aggregated shifts across Europe as the pandemic progressed. Commonalities in experiences of the pandemic reported in our Review are likely to be greater than in reviews of global scope. However, variations in the timing of pandemic waves and the extent of social restrictions were still too great for us to examine in detail their relationship with changes in mental health. The numbers of studies per country for any outcome were generally too small for formal comparisons between countries, but we observed no striking between-country differences. Limitations within the included studies also restrict our conclusions. First, although we include more recent studies than other reviews, we found few publications relating to 2021 and beyond, which contributed a low certainty of evidence for findings later in the pandemic. Second, the certainty of evidence regarding some outcomes (eg, incidence and mental health in people with pre-existing mental health conditions) was restricted by small numbers of studies for each outcome. Third, there was considerable variation between studies in the timepoints used, particularly in how far before March, 2020, pre-pandemic data had been collected. We have aimed for clarity regarding the stage of the pandemic at which data were collected, but some loss of detail has occurred in aggregating studies, including in terms of patterns by sex or gender and age, which are beyond the scope of synthesis for this Review. Fourth, there are important groups for whom evidence is so far insufficient, including people with psychosis and bipolar disorder, and groups at particular risk of adverse effects from COVID-19, such as minoritised ethnic groups. Fifth, people with relevant lived experience had rarely been involved in planning, conduct, or interpretation of studies.

Further research using health-care records or qualitative methods could continue to shed light on the effect of the pandemic on mental health and service use, and the experiences underlying these observations. Further research that carefully distinguishes long-term trajectories in mental health and service use from changes connected to the pandemic is needed to understand the long-term effects of the pandemic on mental health and psychiatric service use. Our study can be repeated on an international scale, including research from low-income and middle-income countries, to provide a fuller picture of how the pandemic affected global mental health. Evidence gaps regarding conditions such as psychosis, bipolar disorder, eating disorders, and people with a personality diagnosis warrant further research, although suitable pre-pandemic comparators are sometimes lacking. More fine-grained quantitative and qualitative investigations of the experiences of groups particularly at risk of adverse outcomes are also warranted and of drivers of variations both in the general population and among people with pre-existing mental health conditions.

Contributors

SJo and BL-E wrote the original study proposal. NA drafted the study protocol with revisions by PB, NL, CL, KM, PS, SMA, SJe, LM, PG, ST, SI, JK, RS, PG, BL-E, and SJ. PB and NA led the searching and data collection processes. ST, SI, ERF, UF, RA, MS, NL, PS, SMA, KRKS, LSR, SH, OK, AG, and TP have done the screening, data extraction, and quality assessment of papers. PB, AG, and TP led the analysis of the data. NA, TS, CL, KM, PS, SJe, LM, PG, ST, SI, ERF, HB, JK, RS, PG, BL-E, and SJ contributed to the analysis and interpretation of data. JK, PG, RS, SJo, and BL-E provided subject expertise and methodological guidance. NA, AG, PB, and TP wrote the initial draft of the manuscript. All authors contributed to consecutive drafts and approved the final manuscript.

Declaration of interests

RS reports grants from Janssen Pharmaceuticals and Takeda Pharmaceutical Company to their institution in the past 36 months. RS also reports supervising a part-time PhD of a GSK employee at their institution. All other authors declare no competing interests.

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