

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

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Summary

The COVID-19 pandemic caused immediate and far-reaching disruption to society, the economy and healthcare services. We synthesised evidence about the impact 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, psychiatric morbidity, or service use, before versus during, or between different timepoints during the pandemic. Epidemiological studies reported higher prevalence of some mental health problems (including depression, anxiety and eating disorders) compared to before the pandemic, but in most cases, this subsequently 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 reduced at the onset of the pandemic but increased later in 2020 and into 2021, though rates did not return to pre-pandemic levels for most services. We found mixed patterns of pandemic impacts on mental health and functioning for adults already living with mental health conditions. Limitations include the early stage in the pandemic at which most included studies were published and a disproportionate focus on depression and anxiety.

Introduction

Following the onset of the COVID-19 pandemic on 11 March 2020, mental health swiftly recognised as an area of concern¹⁻⁴: potential consequences of the pandemic and associated social restrictions included triggering new mental health problems (MHPs), and worsening difficulties already experienced by people living with mental health conditions (MHCs). Pandemic-related service disruption had potential to further exacerbate such mental health impacts. Many studies have investigated aspects of the mental health impact of the pandemic; however, previous systematic reviews have focused only on early stages of the pandemic^{5,6}, measures of symptoms in the general population⁷⁻¹⁰, or comparisons between before and after lockdown^{5,11,12}. Our aim is to provide a comprehensive overview of the mental health impact of the pandemic in its first two years in one major region of the world, helping to inform planning for the continuing response to this pandemic and to future emergencies.

We systematically reviewed evidence regarding mental health epidemiology in higher income countries in Europe. We focused on this region because of similarities between these countries in timing of COVID-19 waves, health service responses, and social restrictions^{13,14}. We included studies which addressed the following three questions, making comparisons either before vs. after the onset of the pandemic, or between different timepoints during the pandemic: What changes have there been in the incidence or prevalence of MHPs; 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 MHCs; and What changes have there been in mental health service use?

Methods

We followed Preferred Reporting Items for Systematic reviews and Meta-Analysis (PRISMA) guidelines¹⁵. 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 Research Mental Health Policy Research Unit (funded to deliver evidence to inform health policy

making), initiated in response to a policymaker request for an evidence synthesis to guide forecasts of future service need.

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 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 (OECD) 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 performing this with the large number of identified studies would have prevented us synthesising and delivering evidence promptly. The Appendix (pp 1-11) shows search strategies.

We included longitudinal or repeated cross-sectional studies comparing timepoints: (a) during the COVID-19 pandemic vs. prior to the pandemic; and/or (b) between different points in the pandemic. Studies with samples of people without pre-existing MHCs were included (RQ1&3), as well as those meeting cut-offs indicating a clinical condition on validated diagnostic instruments or mental health symptoms measures (RQ2&3). Studies with samples defined by having a physical health condition, COVID-19 survivors and healthcare professionals were excluded 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: (1) Incidence or prevalence estimates (either by diagnostic assessment or proportion meeting the clinical threshold on a validated symptom measure); (2) change in mental distress, symptom severity, social functioning, quality of life, suicidal behaviours, or self-harm in people already living with MHCs; (3) or change in mental health

service use. We included only studies where the majority of the sample lived in high-income European countries (OECD criteria).

Title, abstract, and full-text screening were carried out on EPPI-Reviewer Web ¹⁸. Seven reviewers (ST, SI, UF, RA, ERF, MS, 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 taken to improve agreement. The Appendix (pp 12-37) shows studies excluded at full text stage, with reasons.

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 and checked for accuracy by a second reviewer (NA, PB, SH, AG, TP, ST, SI, ERF). We extracted from included studies: study design, aims and objectives, dataset, country/region, publication status when data extracted sample size, involvement in study of people with relevant, population, age, gender/sex, ethnicity, comparison group, symptom/condition measured, setting, primary outcome measures (see Data analysis), and associated statistical data.

Study quality was assessed using the Newcastle-Ottawa Scale for cohort studies, and its adaptation for cross-sectional studies ¹⁹. See Appendix (pp 38-45) for details.

Certainty of evidence

Certainty of evidence for each outcome was independently assessed by two authors (PB, AG, NA, HB) using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) system ²⁰. GRADE guidance was adapted for narrative synthesis according to Murad, Mustafa (21), and further adapted according to methodological differences in the studies addressing each research question. Adaptations were discussed and agreed with the wider team (see Appendix, pp 46-77).

Data analysis

Primary outcomes assessed were changes in 1) prevalence (ascertained through research diagnosis or reaching cut-off score on a clinical measure, a definition used in other reviews focusing on the pandemic),¹² and incidence of MHPs; 2) mental health symptom severity, social functioning, quality of life, psychosocial outcomes, suicidal behaviours, and self-harm in people with pre-existing MHCs; and 3) 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 conducted as 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 to during the pandemic, or different time points over the course of the pandemic), reported outcome, MHP, and service type. Studies that measured general psychopathology or mental distress were grouped together as “non-specific MHP”. Where studies analysed different samples within the same dataset, this was noted during our narrative synthesis. Data from multiple papers were reported together if the sample used was the same throughout.

Role of the funding source

Views expressed are those of the authors and not necessarily of the NIHR, Department of Health and Social Care or its arm's length bodies, or other government departments. The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

Results

We identified 7066 records for title and abstract screening, of which full texts were assessed for 687. Of these, 149 records met inclusion criteria. Pre-print and backward citation searches identified a further 31 records making 177 studies (reported in 180 papers) (Figure 1; Appendix, p. 78). Studies reported changes in prevalence and incidence of MHPs (73 studies; 41.2%); symptom severity, social functioning, quality of life, suicide behaviours, and

self-harm in people with pre-existing MHCs (37 studies; 20.9%); and mental health service use (76 studies; 42.9%); eight studies provided information on multiple research questions.

Fourteen studies (7.9%) measured mental health outcomes in children and young people (CYP) and 163 (92.1%) in adults. Sample sizes ranged from 20 to 24,897,725 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), Turkey (n=3), Denmark (n=2), Poland (n=2), Czech Republic (n=2), Iceland (n=1), Greece (n=1), Lithuania (n=1). Eleven studies reported data from multiple countries. All studies were in English except for three in German²²⁻²⁴.

Eighty-eight studies (49.7%) compared mental health outcomes pre-pandemic with during the pandemic, 55 (31.1%) studies measured outcomes at different time points over the course of the pandemic, and 34 (19.2%) had both a pre-pandemic and during pandemic comparator. A repeated cross-sectional design was used in 93 (52.5%) studies, a longitudinal cohort design in 83 (46.9%) studies, and one study used an open cohort design. Only four studies (2.3%) 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 high for 15 (14.6%) rated high, moderate for 22 (21.4%), and low/very low for 66 (64.1%). Further details of study characteristics (pp 79-259), quality assessments (pp 38-45) and GRADE ratings (pp 46-77) are in the Appendices.

Table 1 presents data on prevalence and incidence of MHPs during compared to before the pandemic, and at different time points of the pandemic (RQ1 – for results of individual studies see Appendix (pp 260-279)).

Overall, high-moderate-certainty evidence suggested that prevalence of depression, generalized anxiety disorder (GAD), and non-specific MHPs was higher during the pandemic (usually limited to timepoints in 2020) than before the pandemic, with size of statistically significant ($p < .05$) increases ranging from 0.25-31%²⁴⁻⁶⁵. Very low-certainty evidence

suggested that prevalence of eating disorders (ED) and mixed depression and anxiety also increased 20-21% for eating disorders and 3.9% for mixed depression and anxiety, one study each ^{41, 66}. 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. Low-certainty evidence suggested that GAD prevalence reduced during this time (2.4-11.5% decline) and very low-certainty evidence suggested prevalence of non-specific MHPs varied over time but may have increased overall between March-June 2020 ^{35, 36, 43, 64, 65, 67-72}.

As the pandemic continued, there was moderate-certainty evidence for an overall slight increase (2-3%) in GAD from the early months of the pandemic to later 2020, but with a dip in prevalence during summer months. Depression (around 6% decline), non-specific MHPs (between 6-21% decline), and post-traumatic stress disorder (PTSD) (between 2.4-4% decline) prevalence reduced between the early pandemic and the end of 2020 (moderate-low-certainty) ^{33, 50, 52-54, 57, 73-84}.

The few studies comparing later in the pandemic (2021) to earlier found little evidence of changes in prevalence of depression or non-specific MHPs between 2020 and 2021 (moderate-certainty), while low-very low-certainty results tentatively suggested increased GAD (6-19%) and decreased PTSD prevalence (5% decrease reported in one study) ^{27, 35, 36, 51, 85-96}.

Studies on sub-populations, including CYP ^{24, 26, 37, 58}, university students ^{27, 50, 51}, and mothers and pregnant women ^{29, 33, 48, 55, 56}, also reported increased prevalence of all MHPs compared to before the onset of the pandemic, apart from anxiety disorders in students (one of two studies reported a significant decrease) ⁴¹, and depression in CYP (2/6 studies reported a non-significant decrease) ^{32, 39}. Studies of university students reported higher prevalence of depression and GAD during lockdown periods than when restrictions were eased, during both 2020 and 2021 ^{73, 89}. One study reported that prevalence of depression and GAD

among parents reduced by later 2020 compared to earlier pandemic timepoints ⁷⁸, and one study in older adults reported a significant increase in prevalence of GAD by later 2020 ⁵⁴.

Estimates of incidence based on service data found evidence of low-moderate-certainty that the incidence of depression, GAD, and PTSD showed statistically significant reductions following the onset of the pandemic compared with before the pandemic ^{97, 98}. Low-certainty evidence also suggested that the monthly incidence of service-recorded incidence of depression, GAD, and non-specific MHPs reduced further over the course of 2020 ^{82, 97}.

Table in the Appendix (pp 279-291) presents data on changes in symptoms during compared to before the pandemic, and at different time points of the pandemic in adults already living with MHCs (RQ2 – see Appendix (pp 291-308) for individual studies).

Among adults already living with MHCs at the onset of the pandemic, evidence of moderate-high-certainty suggested no statistically significant change in general psychopathology and mental distress symptoms, statistically significant improvement in depressive symptoms, and mixed findings regarding changes to anxiety and ED symptoms following the onset of the pandemic compared to pre-pandemic. Very low-low-certainty evidence suggested statistically significant worsening in PTSD symptoms and mixed findings for changes to schizophrenia and bipolar symptoms among adults during the first half of the pandemic vs. pre-pandemic ^{23, 57, 99-105}.

Comparing timepoints during the pandemic, moderate-certainty evidence suggested no overall statistically significant change in depressive symptoms, and mixed findings regarding obsessive-compulsive disorder (OCD) symptoms in adult clinical populations during the first half of 2020. Low-certainty evidence suggested no statistically significant change in schizophrenia and bipolar symptoms, but statistically significant improvements in general psychopathology, during this early pandemic period. Low-certainty evidence suggested that there were mixed findings regarding changes to ED and anxiety symptoms in adult clinical populations during the first half of 2020 ^{69, 106-113}.

Moderate-high-certainty evidence comparing earlier to later stages of the pandemic in 2020 among adults suggested that general psychopathology and mental distress, or symptoms of

depression, schizophrenia or bipolar symptoms did not change statistically significantly over this period, whereas findings regarding PTSD were mixed. Low-certainty evidence suggested no statistically significant change in anxiety symptoms over this period, but findings regarding OCD symptoms were mixed ^{101, 102, 114-118}.

The few studies comparing symptom severity between later (2021) and early stages of the pandemic, found no statistically significant change in anxiety and ED symptoms among adults, while findings about changes in schizophrenia and bipolar symptoms between pandemic timepoints in 2020 and in 2021 were mixed (very low-certainty). Moderate-certainty evidence indicated no statistically significant changes in general psychopathology and mental distress, and very low-low-certainty evidence no statistically significant changes in anxiety, and PTSD symptoms between 2020 and later 2021 among adults ¹¹⁹⁻¹²².

Very low-certainty evidence indicated statistically significant worsening in OCD, general psychopathology and mental distress among CYP already living with MHCs following the onset of the pandemic. Low-certainty evidence suggested no statistically significant change in symptoms of depression and anxiety among CYP with MHCs in comparisons of pre-pandemic vs. just after onset and vs. later 2020. However, low-certainty evidence also suggested statistically significant worsening in depressive and anxiety symptoms among CYP from pandemic timepoints earlier in 2020 to later in 2020. Overall, findings regarding changes in general psychopathology and in mental distress over this timeframe in CYP with MHCs were mixed, with overall conclusions of very low-certainty ^{32, 123-125}.

Moderate-certainty evidence suggested statistically significant worsening in social functioning following the pandemic onset vs. pre-pandemic among adult clinical populations ^{103, 104}.

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). Overall, low-certainty evidence suggested statistically significant improvements in psychosocial burden and negative psychosocial impact of pandemic restrictions in later 2020 vs. just after pandemic onset. Social functioning and quality of life did not change statistically significantly during this timeframe or when comparing 2020 and 2021 (very low-certainty) ^{112, 118, 126}.

Overall, moderate-certainty evidence indicated that suicidal behaviour (measured by clinical records) did not statistically significantly change when comparing pre-pandemic vs. various timepoints during the pandemic (2020 and 2021) among clinical populations of all ages. However, there was low-certainty evidence reduction in self-harm measured through clinical records (sample aged 10+) early in the pandemic vs. pre-pandemic (low-certainty)^{97, 127-129}.

Comparing just after the onset of the pandemic to later timepoints pre-July 2020, self-reported suicidal ideation was reported to have increased but self-reported self-harm to have decreased (very low-certainty). Low-certainty evidence comparing pandemic timepoints pre-July 2020 to later 2020 suggested fluctuating levels of casenote-reported self-harm^{69, 97, 130}.

Table 2 presents data on service use outcomes during vs. before the pandemic, and at different time points during the pandemic (RQ-3: see Appendix (pp 308-325) for details).

Overall, high-moderate-certainty evidence suggested that use of critical and acute mental health care decreased in the early pandemic period vs. pre-pandemic, including in mental health inpatient care (adult admissions: 11-43%, paediatric admissions: 18-42%), mental health presentations to emergency department and walk-in services (adult presentations: 13.5-58%, paediatric presentations: 36-61%), and community-based crisis care. A decrease below pre-pandemic service use levels was similarly found for community mental health and outpatient services for adults of working age (referrals: 24-75.3%; high certainty), CYP (total contacts: 4.36-12%; moderate certainty), and older adults (consultations: 5-18%; moderate certainty) and for mental-health related contacts in primary care (very low-certainty). Across community mental health services, a shift from face-to-face to remote contacts was found in the early pandemic^{22, 70, 97, 108, 124, 128, 129, 131-191}.

An exception was an increase in mental health-related admissions to trauma and resuscitation units to 3-10 times higher (low-certainty) than pre-pandemic levels in the early pandemic. Likewise, even though adult psychiatric admissions decreased overall despite overall decrease in use of adult mental health inpatient services, there were indications that more severe difficulties (e.g., resulting in compulsory hospitalisations) increased¹⁹²⁻¹⁹⁴.

After an initial drop, mental health-related use of adult emergency departments (high-certainty), adult inpatient mental health care (low-certainty), and community mental health services for CYP and older adults (low-certainty) increased by June 2020 compared with just after the onset of the pandemic ^{141, 148, 153, 171, 195}. Mental health-related contacts in emergency departments and primary care increased in later 2020 compared with earlier in the pandemic (high-certainty) ^{162, 163, 178, 196, 197}. Use of community services for CYP decreased in 2020 after the pandemic onset but was greater in 2021 than earlier in the pandemic (very low-certainty) ^{124, 175}. Even so, use of all these services remained below pre-pandemic levels at later time points in 2020: in adult mental health inpatient care and emergency departments (inpatient admissions: 3-41.6% lower; mental health ED presentations: 12-16%; high-certainty evidence), as well as in community mental health and outpatient services for CYP and older adults (low-certainty). Service use was still below pre-pandemic levels in 2021 for adult inpatient care (high-certainty) and CYP community services (low-certainty) ^{128, 133, 175, 187}.

Conversely, use of community mental health and outpatient services for adults of working age (high-moderate-certainty) and paediatric (very low-certainty) emergency department and walk-in services reached higher levels than pre-pandemic later in 2020 and 2021 ^{128, 135, 139, 144-146, 157, 158}. Evidence concerning primary care service use (moderate-certainty) at later timepoints was mixed ^{160, 162, 163}.

Discussion

We identified 177 studies from 20 high-income European countries comparing mental health and service use outcomes either before versus during the pandemic, or over the course of the pandemic.

Most reported that prevalence of MHPs including depression, anxiety and non-specific conditions rose after the onset of the pandemic in general population samples. This 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 ¹⁹⁸. Lockdowns may 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, 199, 200}.

These rises, however, were relatively modest in most cases, and by late 2020 this increase in prevalence appears to have waned. This is consistent with a meta-analysis of longitudinal studies, which found prevalence in March-April 2020 was higher than pre-pandemic, but no longer in July 2020 ¹⁰. This review, however, only compared prevalence prior to vs. early in the pandemic across the world, whereas we examine changes as the pandemic progressed in more detail in high-income European countries.

Studies using healthcare records consistently reported fewer incident diagnoses following the onset of the pandemic than pre-pandemic, consistent with our previous findings early in the pandemic ¹ and with a recent systematic review comparing psychiatric service use before and during the pandemic among CYP ²⁰¹. Early in the pandemic, concerns over risk of infection appear to have prevented some from seeking in-person support ^{1, 200, 202}. This disparity between increased prevalence and reduced service use suggests that the treatment gap in addressing MHPs ²⁰³ in the population may have increased, with potential longer-term repercussions. As well-documented elsewhere ²⁰⁴⁻²⁰⁶, we found that service providers adopted telemental health to ensure continuity of service delivery early in the pandemic, although for some access by this means was challenging, for example due to poor digital connectivity and lack of private space ^{204, 207}.

After this initial substantial drop observed, service use began rising 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 showed evidence of a rise 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 ²⁰⁸⁻²¹⁰.

We found no clear overall pattern of change in mental health symptom severity and associated outcomes in adults with pre-existing MHCs. Most studies showed either no significant change or findings varying between outcomes, with generally low certainty of evidence, partly as each outcome was the focus of only few studies. The lack of a clear worsening in most symptoms contrasts with qualitative reports from people with pre-existing MHCs of negative impacts on their mental health, for example because of disrupted treatment and routines, and increased social and economic stressors ²¹¹. Our mixed and sometimes surprising results may be understood in relation to large variations in experiences of people living with MHCs, with impacts varying by condition, extent to which people were able to continue to connect with formal and informal support, and interactions of the pandemic's impacts with pre-existing social isolation and adversity ^{3, 212}. Indeed, some reported some positive consequences, including a sense of a shared societal experience, 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, 200}.

In CYP with some pre-existing MHCs, we found evidence that symptoms of OCD, general psychopathology and mental distress statistically significantly worsened at the start of the pandemic in 2020. This was in contrast to reduced service use, suggesting mental health needs were not met. This is in keeping with a review finding increases in depression, anxiety and psychological distress after the onset of the pandemic ²¹³, with three studies reporting these were greater for CYP who were already living with a MHC before the pandemic. Our review, including later timepoints in the pandemic, found some evidence of increasing depression and anxiety increased within this clinical population. Exacerbated symptoms of some MHPs among CYP may have been due to school closures, disruptions to daily routines, reduced access to mental health services, and less life-acquired resilience ²¹⁴⁻²¹⁶ but the low quality of evidence on these trends needs to be noted.

Our review offers the most comprehensive summary to date of epidemiological trends in mental health and mental health care in Europe during the COVID-19 pandemic, encompassing both the general population and those with pre-existing conditions, and allowing trends in prevalence to be compared with service use. Use of the GRADE

framework to assess quality of evidence for each outcome and integration of this within our narrative synthesis adds robustness to our conclusions.

Our review has several limitations. Studies included in RQ1 often used cut-offs on symptom measures rather than validated diagnostic instruments to measure prevalence, potentially inflating estimates. Measurement of incidence and also 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 trends across Europe as the pandemic progressed: commonalities in experiences of the pandemic are likely to be greater than in reviews of global scope, but variations in timing of pandemic waves and extent of social restrictions were too great for us to examine relationships between these and mental health trends in detail. Numbers of studies per country for any outcome were generally too small for between-country comparisons, but we observed no striking between-country differences.

Limitations of the included studies limits conclusions from the review. Firstly, while we include more recent studies than other reviews to date, we found few publications relating to 2021 and beyond, contributing to low certainty of evidence for findings later in the pandemic. Secondly, certainty of evidence regarding some outcomes (e.g. on incidence and mental health in people with pre-existing MHCs) was limited by small numbers of studies for each outcome. Thirdly, there were considerable variation between studies in 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 will nonetheless have occurred in aggregating studies, including in terms of patterns by sex/gender and age which are beyond the scope of synthesis for this very broad review. Fourthly, there are important groups for whom evidence is so far lacking, including people with psychosis and bipolar, and groups at particular risk of adverse effects from COVID-19, such as minoritised ethnic groups. Fifthly, people with relevant lived experience had rarely been involved in planning, conduct or interpretation of studies.

Further research using healthcare records or qualitative methods may continue to shed light on the impact of the pandemic on mental health and service use, and the experiences

underlying observed trends. Further research that carefully distinguishes long-term trajectories in mental health and service use from pandemic changes is needed to understand the long-term effects of the pandemic on mental health and psychiatric service use. Furthermore, our study can be repeated on an international scale, including research from low and middle-income countries, to provide a fuller picture of how the pandemic impacted 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 MHCs.

Contributors

SJ and BL-E contributed to 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 contributed to screening, data extraction and/or quality assessment of papers. PB, AG and TP led on analysis of data. NA, TS, CL, KM, PS, SJe, LM, PG, ST, SI, ERF, HB, JK, RS, PG, BL-E and SJ contributed to analysis or interpretation of data. JK, PG, RS, SJ, 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 Interest

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

Data sharing

Please contact the corresponding author if you would like to see any data that are not included in this review or the appendix.

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