

TITLE: MENTAL HEALTH AFTER THE COVID-19 PANDEMIC: POLICY AND PUBLIC HEALTH

Authors

Etheldreda Nakimuli-Mpungu, Prof Celso Arango, Prof Rakhi Dandona, Prof Tamsin Ford, Prof Ann John, Prof Ayana Jordan, Rebecca Cherop, Lola Kola, Prof Carlos López-Jaramillo, Alexandra M Schuster, Kelvin Opiepie, Fabian Musoro, Lawrence A. White, Dmytro Martsenkovskyi, Prof Benedict Daniel Michael, Prof Rory O'Connor, Prof Peter B. Jones

Affiliations

Etheldreda Nakimuli-Mpungu

Etheldreda.Nakimuli@lshtm.ac.uk

ORCID: 0000-0001-6857-8931

PhD

Affiliations: The Medical Research Council/Uganda Virus Research Institute (MRC) & London School of Hygiene and Tropical Medicine (LSHTM) Uganda Research Unit, Entebbe, Uganda.

Celso Arango

carango@hggm.es

<https://orcid.org/0000-0003-3382-4754>

MD

Affiliations: Department of Child and Adolescent Psychiatry, Hospital Universitario La Paz, IdiPAZ, School of Medicine, Universidad Autónoma de Madrid, CIBERSAM, Madrid, Spain

Rakhi Dandona

rakhi.dandona@phfi.org

<https://orcid.org/0000-0003-0926-788X>

PhD

Affiliations: 1. Public Health Foundation of India, New Delhi, India

Full address: Public Health Foundation of India, No. 60, Lane 2, Part of Saidulajab Extension, Near Saket Metro Station Gate No. 2, New Delhi - 110030, India

Tamsin Ford

tjf52@medschl.cam.ac.uk

<https://orcid.org/0000-0001-5295-4904>

FRCPsych

Affiliations: University of Cambridge, Department of Psychiatry

Full address: Hershel Smith Building, Forvie Site, Robinson Way, Cambridge Biomedical Campus, CB2 0SZ

Professor Ann John

a.john@swansea.ac.uk

FFPH

Affiliations: Swansea University Medical School

Full address: Data Science Building, Sketty, Swansea SA2 8QA

Ayana Jordan

Ayana.Jordan@nyulangone.org

ORCID: 0000-0002-7850-8096

Preferred degree (only one): MD

Affiliation(s): New York University Grossman School of Medicine, NYU Langone Health

Full address: 550 First Avenue, New York, NY 10016

Ms. Rebecca Cherop

rebeccacherop33@gmail.com

Preferred degree: International Diploma in Mental Health, Human Rights and Law

Affiliations: The Semicolon Nation

Full address: Naalya, Kampala, Uganda

Lola Kola

lola.kola@kcl.ac.uk

<https://orcid.org/0000-0003-0678-796X>

PhD

Affiliations: Health Service and Population Research Department

Institute of Psychiatry, Psychology & Neuroscience (IoPPN), King's College London

Full address: David Goldberg Centre, Health Service and Population Research Department

Institute of Psychiatry, Psychology & Neuroscience De Crespigny Park London SE5 8AF

Carlos López-Jaramillo

carlos.lopez20@udea.edu.co

ORCID: <https://orcid.org/0000-0002-1875-1369>

Professor

Affiliations: Department of Psychiatry, School of Medicine, Universidad De Antioquia

Full address: CARRERA 43 A N 1-50 OF 954 MEDELLIN, COLOMBIA, 050021

Alexandra M Schuster

ORCID: 0000-0002-4093-8752

MSc

Affiliations: Department of Psychiatry, University of Cambridge, UK

Kelvin Opiepie

kelvinopiepie@yahoo.com

BSc Psychology

Affiliations: LEAD Community Foundation, 8, Gbadamosi Street Off Oremeji Bus stop, Akute Ogun State, Nigeria

Fabian Musoro

fmusoro@mohcc.org.zw

<https://orcid.org/0000-0002-1649-8347>

MSc

Affiliations: University of Zimbabwe

Full address: University of Zimbabwe, Plot Number 424, Edinburgh A, Seke, Harare, Zimbabwe

Dmytro Martsenkovskyi

d.martsenkovskyi@gmail.com

<https://orcid.org/0000-0002-6030-2698>

PhD

Affiliations: 1. Bogomolets National Medical University, Kyiv, Department of Psychiatry and Narcology, Kyiv, Ukraine;

Full address: 04108, Kyiv, Ukraine, 19/3 European Union Ave., apt.103, Kyiv, Ukraine

Professor Benedict Daniel Michael

Benedict.Michael@liverpool.ac.uk

<https://orcid.org/0000-0002-8693-8926>

PhD

Affiliations: 1. Clinical Infection Microbiology and Immunology, Institute of Infection, Veterinary and Ecological Sciences, University of Liverpool.

Full address: Brain Infection & Inflammation Group, Clinical Sciences Centre, The Walton Centre NHS Foundation Trust, Lower Lane, Fazakerly, Liverpool L9 7LJ

Rory O'Connor

Rory.OConnor@glasgow.ac.uk

<https://orcid.org/0000-0002-3650-4994>

PhD

Affiliations: University of Glasgow

Full address: School of Health & Wellbeing, Clarice Pears Building, University of Glasgow, Glasgow, G12 8TA

Lawrence A. White

larry.ookpik@gmail.com

ORCID: 0000-0003-4459-4499

MDE

Affiliations: Unicaf University, Zambia

Peter B. Jones

pbj21@cam.ac.uk

<https://orcid.org/0000-0002-0387-880X>

PhD

Affiliations: Department of Psychiatry, University of Cambridge, and CAMEO, Cambridgeshire & Peterborough NHS Foundation Trust, CB2 0SZ, UK.

Corresponding Author Address

Etheldreda Nakimuli-Mpungu, MMED (Psych), PhD
Associate Professor of Psychiatry & NCD Epidemiology
London School of Hygiene and Tropical Medicine
MRC/UVRI and LSHTM Uganda Research Unit,
PO Box 49, Entebbe, Uganda
Phone: +256 788994050
Email: Etheldreda.Nakimuli@lshtm.ac.uk

Citation: Nakimuli-Mpungu, E., et al. (2025). Mental health after the COVID-19 pandemic: Policy and public health. Unpublished manuscript, in preparation.

Summary

The COVID-19 pandemic revealed critical weaknesses in mental health systems and intensified existing inequities, highlighting the need for a comprehensive assessment of policy responses and strategies for future resilience. We synthesised evidence from a structured literature search (2020–2024), expert consultation, and lived-experience contributions, guided by four questions on system adaptations, approaches to inequities, financing strategies, and evidence gaps. Public health systems embedded infodemic management, expanded digital services, and mobilised community workforces, but responses varied in equity and effectiveness. Gender, age, socioeconomic, and racial disparities worsened, though social protection, gender-sensitive policies, school-based services, and culturally adapted interventions showed promise. High-income countries buffered shocks with welfare measures, while low- and middle-income countries faced sharp fiscal constraints. Few studies evaluated cost-effectiveness, or equity impacts of psychosocial interventions. Building resilient, equitable mental health systems require integrated policies spanning communication, digital and community care, gender- and youth-responsive strategies, and sustainable financing, alongside investment in longitudinal and cross-national research.

Introduction

The COVID-19 pandemic magnified mental health problems and exacerbated pre-existing mental health inequities¹. It disproportionately affected groups who are more exposed to adverse social, economic, and environmental conditions, such as those living in deprived areas², those shielding for health reasons³, ethnic minority groups⁴, and individuals with pre-existing mental health problems⁵. This highlighted the need for inclusive and accessible healthcare for all, requiring holistic approaches that integrate knowledge management⁶, inter-sectoral collaboration⁷, and an understanding of positive socio-economic determinants⁸, resilience⁹, and prevention mechanisms¹⁰. These components should be integrated to form a total mental health strategy.

Moreover, the pandemic was also notable for managing knowledge and information through the prism of public health messaging¹¹. Social media emerged as an accelerant for disseminating rapid information and spreading disinformation. The complex interactions between social media use and mental health via diverse mechanisms indicate a need for more research¹². Post-pandemic recovery efforts must prioritize mental health through a balanced approach that addresses both socio-economic inequalities and the direct needs of those with mental disorders¹³. For example, the rise in the use of digital mental health interventions during the pandemic highlighted the problem of digital exclusion, leading to inequities in accessing these services¹⁴.

During the pandemic, governments and health systems were pressed to strengthen mental health funding, adapt policies, and address social determinants alongside clinical needs (15). Policy debates often focused on how to prevent further marginalisation of vulnerable groups and ensure equitable access to services¹⁶. Public policy was recognised as a critical factor in shaping the social, economic, and environmental conditions that influence mental well-being¹⁷. In addition, effective public health strategies were understood to depend on engaging individuals as active community participants, rather than treating them solely as passive service recipients¹⁸.

In April 2020, The Academy of Medical Sciences and MQ Mental Health Research convened 24 mental health and neuroscience experts to establish research priorities in response to the COVID-19 pandemic. This resulted in a position paper in *The Lancet Psychiatry*, which identified immediate and long-term priorities for mental health research related to the pandemic, with a focus on vulnerable populations¹³. Building on this, the MQ Mental Health Research and *Lancet Psychiatry* Standing Commission on the COVID-19 Pandemic and Mental Health was established to review the effects of the ongoing pandemic and the emerging post-pandemic situation. The Commission expanded to 50 members from diverse regions, disciplines, and lived experiences, with the aim of identifying key areas for pandemic-related mental health research, assessing progress on the original priorities, and updating the agenda as the situation evolved.

A virtual launch meeting was held to develop a methodology for guiding the Commission. It was agreed that three complementary papers would be produced: one focusing on clinical mental health delivery, another on policy and public health and another on neuropsychiatric sequelae of SARS-CoV-2 infection. Sections for each paper were defined, working groups were formed, and roles and responsibilities were assigned. The Commission was led by two

Co-Chairs—one from a low-income country and one from a high-income country, who provided scientific oversight, editorial review, and guidance. MQ Mental Health Research acted as the secretariat and project manager, coordinating activities, liaising with section leads, and serving as the central communication hub.

This paper complements Paper 1 of the MQ Mental Health Research and Lancet Psychiatry Standing Commission on the COVID-19 Pandemic and Mental Health, which examined the effects of the pandemic on mental health as well as on the delivery of clinical mental health care, and Paper 3, which will examine the neuropsychiatric sequelae of SARS-CoV-2 infection. Our specific contribution in Paper 2 is to evaluate the public mental health and policy dimensions of the pandemic. We ask four interlinked questions: How did public health policy and systems adapt to protect population mental health? Which policy approaches have proven most effective in reducing the structural inequities in mental health that were exposed or exacerbated by the COVID-19 pandemic, particularly across socioeconomic groups, genders, and geographic regions? Which policy investments and financing strategies were most effective in addressing the economic consequences of mental health during and after COVID-19? What are the overall critical research gaps in public mental health and policy that must be addressed to guide future policy formulation and preparedness? By addressing these questions, this paper offers a distinct contribution: to translate pandemic lessons into concrete policy directions for future preparedness, equity-driven investment, and population mental health promotion.

Policy and Public Health System Adaptations for Mental Health

During the COVID-19 pandemic, governments, public health agencies, and communities mounted a broad range of responses to protect population mental health. These responses reflected multiple levels of action, from national communication and regulatory measures to service delivery and community-led adaptations, with highly variable effectiveness. Understanding how systems adapted is critical, as these efforts shaped both immediate wellbeing and longer-term resilience. This section examines how countries combined information management, service reorganisation, and community mobilisation to mitigate distress, highlighting lessons on communication resilience, system flexibility, and equity in mental health care.

Information and Communication Resilience

During COVID-19, public health campaigns promoted safety through social and traditional media, but infodemics, the overabundant and often misleading information, threatened mental health.^{19,20} A meta-analysis found that high social media exposure was linked to psychological distress,²¹ whereas reliance on trusted sources (WHO, health departments, medical institutions) was protective.²² While messages such as “flatten the curve” supported disease control, they also fueled fear and anxiety,²³ whereas communication about vaccine rollout provided hope and restored agency.²⁴ Social media played a dual role: disseminating accurate health information²⁵ but also amplifying misinformation,²⁶ with consumer-generated videos often outcompeting official content.²⁷ Positive messages buffered distress,²⁸ yet exposure to alarming or false information worsened depression and anxiety²⁹.

The impacts of social media on mental health varied by age. A population-based study in Hong Kong found that social media use was associated with different risks for younger and older adults during COVID-19, with younger people more vulnerable to negative mental

health outcomes³⁰. Digital and health literacy also emerged as protective factors: students with higher levels of health or mental health literacy reported lower stress, anxiety, and depressive symptoms³¹⁻³³. Evidence further suggests that reducing social media or digital screen use can improve wellbeing, mood, and even biological stress markers, reinforcing the potential of behavioural interventions^{34,35}.

Health systems adapted by embedding “infodemic management” into public health functions, including social listening, rumor tracking, and myth-busting, often led by WHO, UNICEF, and Africa CDC^{36,37}. WHO institutionalised infodemic management as a core public-health function through competency frameworks and tools such as the Early AI-supported Response with Social Listening (EARS) platform³⁸, while UNICEF and partners operationalised rumor management and community-level social listening to guide risk communication and community engagement (RCCE) strategies^{39,40}. Regionally, the Africa Infodemic Response Alliance (AIRA) coordinated efforts to counter misinformation across the continent^{41,42}.

Regulatory measures also evolved: the European Union’s Digital Services Act mandated platform accountability, requiring systemic risk assessments and mitigation of disinformation^{43,44}. In the United States, the Surgeon General’s Advisory on Health Misinformation explicitly called for a whole-of-society response, involving government, technology companies, media, health professionals, and civil society⁴⁵. Together, these policies demonstrate how governments and global health actors integrated information management, digital regulation, and community engagement to protect population mental health during the COVID-19 pandemic.

Service and System Resilience

Health systems showed varied resilience in maintaining mental health care during the pandemic. In Italy, distress rose under lockdown, but supportive online communities helped to buffer isolation and protect wellbeing⁴⁶. More broadly, resilience is defined as the capacity of health systems to absorb shocks while sustaining essential services⁴⁷. Yet COVID-19 also revealed the limits of resilience, highlighting the need for “transilience”—the capacity not only to adapt but to transform systems to address structural vulnerabilities⁴⁸.

Governments responded by deploying hotlines, telepsychiatry, and cross-sector collaborations^{49,50}. New Zealand and Taiwan’s daily briefings combined empathy with scientific clarity, maintaining public trust^{51,52}, while Nigeria’s #TakeResponsibility campaign mobilized citizens through social media⁵³. Where communication was opaque, misinformation and fear thrived⁵⁴. Evidence shows that countries integrating communication with service delivery—through telehealth, blended models, and continuity of psychosocial care were more effective in reducing distress^{55,56}.

Community and Individual Resilience

Policies also targeted resilience at individual and community levels. Protective factors such as structured routines, hobbies, physical activity, and family organization reduced distress⁵⁷⁻⁵⁹. In Spain, psychiatric patients with higher resilience experienced fewer severe depressive symptoms,⁶⁰ while studies across five countries showed that resilience-building behaviors mitigated paranoia and distress⁶¹. Occupational health policies supporting peer networks and self-care helped frontline workers adapt.⁶²

Digital interventions, including Canada’s Wellness Together platform and crisis text lines, scaled access to support. Brief online programs for healthcare workers reduced distress and promoted self-compassion.⁶³ These responses highlight how digital tools can extend reach if

paired with strategies to overcome digital exclusion. Resilience also fostered post-traumatic growth (PTG), with individuals reporting improved wellbeing and deeper relationships.⁶⁴⁻⁶⁶

Policies promoting collective solidarity—such as gratitude campaigns for health workers and community-based mutual aid—helped nurture post-traumatic growth (PTG)^{67,68}. Service innovations further supported resilience: Italy shifted 75% of outpatient consultations to virtual care⁶⁹, while Canada's largest psychiatric hospital expanded virtual visits sevenfold⁷⁰. Helplines such as India's Kiran provided 24/7 multilingual support⁷¹, and Chèque Psy program funded student therapy sessions⁷². Cross-sector initiatives, France's including Thailand's mobilization of one million community health workers, expanded psychosocial care at scale^{73,74}.

Comparability of Resilience Across Countries

Cross-national evidence underscores the importance of policy design. A meta-analysis of 226 studies across 44 countries found stringent government policies associated with lower depressive symptoms in 33 countries,⁷⁵ though in England strict lockdowns worsened mental health where support was insufficient.⁷⁶ OECD data show that wage subsidies and unemployment benefits alleviated financial fears, reducing distress⁷⁷. Yet inequities persisted: South Asia and Latin America experienced the highest burden due to resource scarcity,⁷⁸ while LMICs reported widespread income loss and food insecurity, amplifying distress.⁷⁹ Adaptation of services varied: high-income countries transitioned more smoothly to telepsychiatry,^{80,81} whereas LMICs struggled with digital divides. Still, innovations such as India's helplines and Australia's large-scale telehealth demonstrated scalable models. Evidence consistently shows that transparent communication, accessible services, and social protection policies buffered mental distress. Future crises demand system-wide strategies that integrate communication, service delivery, and social protection, with equity at the center, to prevent widening disparities in mental health outcomes.

Policy Approaches to Address Structural Inequities in Mental Health

The COVID-19 pandemic exacerbated pre-existing mental health inequities, disproportionately affecting individuals and communities exposed to social, economic, and environmental disadvantage. Paper 1 of the Commission explored the different effects of the pandemic on mental health across these groups, including variations by age, gender, socioeconomic status, and pre-existing vulnerability. Building on that work, this section examines policy approaches that sought to address these structural inequities and mitigate their impact on population mental health.

Before the pandemic, mental health burdens were unevenly distributed, disproportionately affecting individuals exposed to adverse socio-economic and environmental conditions from pre-natal stages through to later life⁸². The COVID-19 pandemic exacerbated these inequities. Containment measures such as lockdowns, physical distancing, and quarantine intensified existing disparities linked to social class, ethnicity, gender, disability, education, and working conditions⁸³. Youth, women, people of lower socio-economic status, and those with chronic conditions or pre-existing mental health issues were particularly vulnerable^{84,85}. In the UK, people living in deprived neighbourhoods, those shielding for health reasons, individuals from Black, Asian, and other minority ethnic backgrounds, and those with prior histories of mental illness were disproportionately affected^{86,87}.

Gender and Mental Health Inequities

The COVID-19 pandemic reinforced and reshaped gendered patterns of mental health, with many of these differences linked to the social and economic effects of public-health measures and policy responses during the crisis. Paper 1 of the Commission explored the differential impacts of the pandemic on mental health across genders and other population groups. Building on that work, this section focuses specifically on how pandemic policies and subsequent government responses influenced gender-related mental health outcomes and examines policy approaches that sought to address these inequities and mitigate their impact on population wellbeing.

The pandemic reinforced and reshaped gendered patterns of mental health, with many of these differences linked to the social and economic effects of public-health measures and policy responses during the crisis. Paper 1 of the Commission explored the differential impacts of the pandemic on mental health across genders. Building on that work, this section focuses specifically on how pandemic policies and subsequent government responses influenced gender-related mental health outcomes and examines policy approaches that sought to address these inequities and mitigate their impact on population wellbeing.

Women consistently reported higher levels of anxiety and depression⁸⁸, alongside economic insecurity⁸⁹, and the interplay of ethnicity and regional factors⁹⁰. Increased caregiving burdens⁸⁸, unpaid domestic work, and heightened risks of intimate partner violence during lockdowns compounded these challenges. Female healthcare workers, in low- and middle-income settings such as Peru, reported worse outcomes than their male counterparts⁹¹. More broadly, women were disproportionately exposed to burnout while simultaneously shouldering unpaid domestic labour and caregiving responsibilities⁹¹.

At the same time, men experienced increased depression, aggression, and anxiety, particularly in the context of job loss and economic hardship, as reported in Germany⁹² and the Middle East⁹³. Interestingly, evidence suggests that compliance with distancing measures reduced anxiety and depression among women but had little effect on men⁹⁴. These gender-specific responses underscore the need for intentional policy design. Gender-responsive strategies, including expanded paid parental leave⁹⁵, investment in IPV shelters⁹⁶, and the scaling up of perinatal mental health services⁹⁷, have proven effective in buffering gendered risks. Evidence shows that peer-delivered and task-shared models of perinatal mental health care are both effective and cost-efficient⁹⁸. Together, these policies strengthen resilience and reduce long-term inequities in mental health outcomes.

Age-Specific Inequities

Although older adults bore the highest mortality risk, they often reported lower levels of anxiety and depression than younger groups⁹⁹, consistent with pre-pandemic resilience linked to life experience and coping resources¹⁰⁰. By contrast, children, adolescents, and young adults experienced steep increases in depression, anxiety, and suicidal ideation, driven by disrupted education, social isolation, and uncertainty about the future¹⁰¹. Cross-national policy responses reflected this divide. For example, France's Chèque Psy programme provided university students with free therapy sessions¹⁰², while at least 26 U.S. states expanded school-based mental health provision, legislating for additional counselors,

tele-mental health services, and social-emotional learning curricula¹⁰³. These examples demonstrate the value of embedding mental health services within schools and higher education institutions as a strategy to buffer the impact of crises on youth mental health.

Socioeconomic Inequities and Social Protection

Building on findings from Paper 1 of the Commission, which showed that socioeconomic disadvantage heightened vulnerability to psychological distress during the pandemic, this section examines how social-protection policies mitigated these effects across different contexts. Across high-income settings, OECD member states, such as the United States, the United Kingdom, and Australia introduced social protection policies¹⁰⁴. In the United Kingdom, the Coronavirus Job Retention Scheme (CJRS)—a national furlough programme providing wage subsidies to preserve employment—helped mitigate mental health harms¹⁰⁵. In Australia, the JobKeeper wage-subsidy and enhanced income-support programmes helped cushion the mental health impact of job and income loss¹⁰⁶. In the U.S., States with stronger and longer eviction moratorium protections had lower psychological distress among adults during the pandemic¹⁰⁷ and temporary expansion of the Child Tax Credit reduced child poverty to historic lows and alleviated parental stress¹⁰⁸.

In Low and Middle Income Countries (LMICs), cash transfers in Kenya¹⁰⁹ and Latin America reduced stress and intimate partner violence¹¹⁰. These findings affirm that income support, housing stability, and food security function as upstream mental health interventions and should be regarded as essential elements of equitable public health policy.

Racial, Ethnic, and Geographic Inequities

The pandemic magnified racial and ethnic disparities in mental health. Panel 2 presents the perspective of an expert-by-experience from Nigeria, contributed through the Commission's process of including lived-experience voices. It highlights how the COVID-19 pandemic strained an already fragile mental health system, revealing both service gaps and opportunities for innovation. By situating Nigeria's experience, this panel illustrates how the intersection of structural disadvantage, digital divides, and cultural norms shaped pandemic mental health outcomes. It also underscores the urgent need for innovative, equity-driven digital and community-based solutions.

In high-income countries, communities of colour experienced greater exposure to COVID-19, higher mortality, and fewer opportunities to access culturally responsive care¹¹¹. Digital care models provided partial mitigation: Black and Latinx populations in the U.S. increased their engagement with tele-mental health services during the pandemic, suggesting potential to reduce disparities if digital divides are addressed¹¹². Culturally grounded, community-led initiatives such as Uganda's Group Support Psychotherapy¹¹³, Zimbabwe's Friendship Bench¹¹⁴ and India's national Kiran helpline¹¹⁵ highlighted scalable, low-cost models to expand access in resource-constrained settings.

Digital and Blended Mental Health Services

The COVID-19 pandemic accelerated the use of digital technologies in mental health care. National platforms such as Canada's Wellness Together portal¹²¹, Australia's large-scale telehealth expansion¹²², and the U.S. relaxation of telepsychiatry regulations¹²³ illustrated how high-income countries rapidly adapted systems to sustain access. Across Africa, innovative models also emerged. In rural South Africa, youth engaged with mobile-based psychosocial support and health workers via social media, despite persistent barriers of cost and digital literacy¹²⁴. Nigeria scaled up telepsychiatry to ease service backlogs¹²⁵, while in Angola, a provider-focused telemedicine programme identified both enabling factors (training, ethical frameworks) and constraints (legal and infrastructural gaps) for blended care¹²⁶. In Uganda, Tele-Support Psychotherapy (TSP), delivered by mobile phone to young people with depression, demonstrated the feasibility and acceptability of culturally adapted digital psychotherapy in a low resource setting¹²⁷.

At the global level, the WHO Guideline on Digital Interventions (2019)¹²⁸ and the WHO Global Strategy on Digital Health (2020–2025)¹²⁹ provide evidence-based recommendations and governance frameworks for scaling SMS, app-based, and telemedicine tools, underpinning investment in mobile and remote mental health services. Importantly, both policies also address digital exclusion by promoting equity-focused design, interoperability, and workforce capacity-building to ensure vulnerable populations in low-resource settings can benefit from these services. These experiences highlight both the potential and limitations of digital care, as reliance on online platforms risked deepening inequities in access to devices, connectivity, and digital literacy¹³⁰. Evidence indicates that the most effective solutions were blended models, combining digital and in-person support tailored to user needs¹³¹. To ensure equity, sustained investments in broadband infrastructure, subsidised devices, and digital skills training will be critical.

Policy Investments and Financing Strategies

The relationship between mental health and economic well-being is bidirectional: poor mental health can limit employment opportunities and increase dependence on social services, while economic instability worsens mental health challenges, creating a cycle of disadvantage¹³². The pandemic intensified these dynamics, as rising infections and lockdowns disrupted employment and income stability, leading to widespread financial insecurity¹³³. This negative cycle reduced overall economic well-being, undermined financial stability, and weakened the ability to meet essential needs.

Variation Between Countries

In the United States, decreased employment and economic uncertainty doubled the prevalence of common mental disorders¹³⁴, while spending and service utilization increased significantly among insured adults^{135 136}. By contrast, in Hong Kong, higher rates of depression were observed but accompanied by a reduction in mental health service use, reflecting access barriers even in well-resourced settings¹³⁷. These contrasting trends demonstrate how health system capacity and social protection mechanisms mediate the economic and mental health consequences of the pandemic.

Globally, the pandemic reshaped economies and exposed deep vulnerabilities¹³⁸. High-income countries (HICs), including the United States, Germany, and Norway, were able to buffer shocks through stimulus packages, robust welfare systems, and sovereign wealth reserves¹³⁹. These measures helped stabilize income levels, employment, and healthcare access, thereby limiting the rise in poverty and inequality. By contrast, low- and middle-income countries (LMICs), constrained by limited fiscal space, experienced sharp increases in poverty, unemployment, and food insecurity¹⁴⁰. Consumer behaviour shifted universally toward higher savings and reduced discretionary spending. Yet while wealthier nations maintained buffers, LMICs struggled to meet essential needs, reinforcing global inequalities. These disparities highlight the critical role of fiscal capacity and social protection mechanisms in mitigating the mental health impact of economic crises.

Interventions

Pharmaceutical and non-pharmaceutical interventions (NPIs) also shaped both economic and mental health outcomes. In high-transmission settings such as the United States, frequent screening and testing proved cost-effective¹⁴¹, while vaccination strategies that prioritized high-risk groups maximized monetary benefits and demonstrated particularly strong returns in contexts where weekly testing reduced spread¹⁴². Although therapeutic treatments remain essential for severe cases, they are less clearly cost-effective compared with preventive approaches, though combining strategies may enhance both economic and health outcomes. In China, strict NPIs such as isolation and quarantine were shown to be optimal for controlling transmission¹⁴³⁻¹⁴⁵, but also generated indirect economic and mental health costs^{147,148}. Policies prioritizing layered NPIs, screening, vaccination, and personal protection, provided the highest net benefits and inform future strategies¹⁴⁹.

Despite rising mental health needs, few studies have rigorously evaluated the cost-effectiveness of mental health interventions¹⁵⁰, particularly for vulnerable groups¹⁵¹. Moreover, existing analyses rarely incorporate distributional equity, even though disproportionate impacts on marginalized populations are well documented¹⁵². Economic evaluations during the pandemic have remained heavily concentrated on NPIs, leaving limited evidence on the comparative value of scaling psychosocial interventions, digital mental health services, or integrated social protection measures.

Preparedness for Future Crises Addressing these shortcomings requires a forward-looking research and investment agenda. Several governments and international bodies have already acted to strengthen preparedness for future crises. For example, Group Support Psychotherapy in Uganda was included in Uganda's national HIV treatment guidelines¹⁵³; the United States launched the 988 Suicide & Crisis Lifeline in 2022¹⁵⁴; the European Union introduced its Mental Health Initiative in 2023¹⁵⁵; and WHO updated its Mental Health Action Plan (2021–2030) to incorporate pandemic lessons¹⁵⁶. Likewise, Canada¹⁵⁷ and Australia¹⁵⁸ and have embedded mental health supports within their national recovery strategies.

The relevance of these post-pandemic mental health initiatives is heightened by mounting global health financing pressures. Political shifts and funding cuts have eroded multilateral support and strained health systems worldwide¹⁵⁹. For example, abrupt reductions in U.S. funding have impeded WHO's ability to maintain essential child health programmes¹⁶⁰ and disrupted service continuity in low-resource settings¹⁶¹. Global health funding has hit a 15-

year low, with drastic cuts affecting aid for mental health programs ¹⁶². These developments highlight the urgent need for sustainable financing mechanisms and protected investments in mental health to ensure that gains achieved during COVID-19 are not lost amid future global shocks.

Priority Evidence Gaps for Public Mental Health Policy Post-Covid-19

The pandemic has exposed substantial evidence gaps that constrain governments' capacity to design and implement effective, equitable mental-health policies. These gaps span data systems, intervention research, and international policy learning, limiting the evidence base needed for sustained mental-health recovery. Strengthening research across these domains will be essential to build resilient, evidence-informed mental-health systems for future crises.

Long-Term Data and Mechanisms

A critical gap is the lack of longitudinal data capturing the long-term trajectories of mental health across diverse populations¹⁶³. Research is especially needed on delayed and prolonged impacts of social isolation and the vulnerabilities of groups such as healthcare workers, children, and older adults¹⁶⁴.

Equally important is the limited understanding of the mechanisms by which social isolation, financial hardship, and disrupted family dynamics affect mental health across cultural and socioeconomic contexts ¹⁶⁵. Social isolation has been consistently associated with worsening anxiety and depression, particularly among older adults and marginalized groups ¹⁶⁶, while economic insecurity and job loss have been linked to depressive symptoms and suicidal ideation ¹⁶⁷. Yet the causal pathways, whether neurobiological, psychological, or social, remain poorly defined. Evidence in this area is critical for policies that expand social protection, strengthen unemployment and housing support, and promote age- and culture-sensitive interventions ¹⁶⁸.

Interventions and Media

Another major gap concerns the effectiveness, scalability, and cultural appropriateness of interventions. While peer-support models, resilience training, and digital platforms have shown promise, rigorous evaluations are needed to determine which interventions work best, for whom, and in which settings ¹⁶⁹. Policymakers must therefore prioritize investment in implementation research and comparative effectiveness trials to guide the integration of mental health services into health and social care systems, particularly in low- and middle-income countries.

Evidence on the impact of media, misinformation, and “infodemics” on mental health remains limited. Although studies suggest associations between high media exposure and anxiety, findings are inconsistent, and potential benefits of digital engagement are underexplored ^{170,171}. Research in this area is vital to inform policies on responsible public health communication, regulation of misinformation, and promotion of digital literacy. Without such knowledge, efforts to build trust and resilience in future crises will remain fragmented.

National Comparisons

Another important evidence gap is the limited use of cross-national comparative research and diverse data sources to examine how different pandemic responses influenced mental health outcomes. Comparative analyses across countries, using harmonized data from longitudinal cohorts, administrative systems, and digital health platforms, are essential to identify which policy and service strategies were most effective and equitable. Without such evidence, opportunities to draw lessons across contexts and to design transferable policy solutions will be missed¹⁷².

Together, these gaps highlight the urgency of a coordinated research agenda that integrates longitudinal studies, mechanistic analyses, and intervention trials. Table 1 summarises the key domains where gaps are identified, the challenges exposed by COVID-19, and the key policy strategies to strengthen equitable and resilient mental health systems.

Conclusion

The COVID-19 pandemic exposed deep mental health challenges and disparities, underscoring the need for post-pandemic policies that are inclusive, adaptive, and evidence-driven. This paper argues for strengthening social connectedness, socioeconomic safety nets, and clear communication as foundational strategies. It highlights cost-effective digital and community-based interventions able to reach vulnerable groups, while also emphasizing targeted support for high-risk groups such as healthcare workers to reduce burnout and facilitate recovery. The review calls for rigorous research into the long-term impacts of digital media, economic stress, and structural inequity, advocating inclusive, longitudinal studies to guide policymaking. In sum, this work charts a pathway toward resilient, equitable mental health systems built to protect population well-being in future crises.

Competing interests

The authors declare no competing interests.

Acknowledgements

The authors thank Megan Von Isenburg, Emma Kolaru, Mariana Bolivar and the team at MQ Mental Health Research for their support to the Commission.

TF and PBJ are supported by the NIHR ARC East of England and Cambridge BRC. The views expressed in this paper are those of the authors, not of the funders that accept no responsibility for them.

C. Arango was supported by the Spanish Ministry of Science and Innovation, Instituto de Salud Carlos III (ISCIII), co-financed by the European Union, ERDF Funds from the European Commission, “A way of making Europe”, financed by the European Union – NextGenerationEU (PMP21/00051), PI19/01024. PI22/01824 CIBERSAM, Madrid Regional Government (B2017/BMD-3740 AGES-CM-2), European Union Structural Funds, European Union Seventh Framework Program, European Union H2020 Program under the Innovative Medicines Initiative 2 Joint Undertaking: Project PRISM-2 (Grant agreement No.101034377), Project AIMS-2-TRIALS (Grant agreement No 777394), Horizon Europe, the National Institute of Mental Health of the National Institutes of Health under Award Number 1U01MH124639-01 (Project ProNET) and Award Number 5P50MH115846-03 (project FEP-CAUSAL), Fundación Familia Alonso, and Fundación Alicia Koplowitz.

Lancet–MQ Standing Commission on COVID-19 and Mental Health

Ziyad Al-Aly, Nisreen Alwan, Chris Bartley, Mariana Bolivar, Michael Eriksen Benros, Ed Bullmore, Felicity Callard, Rebecca Cherop, Eric Chen, Rakhi Dandona, Tamsin Ford, Adam Hampshire, Megan von Isenburg, Bronwyn Graham, Simon Gilbody, Emily Holmes, Ann John, Edgar Jones, Peter Jones (Co-Chair), Ayana Jordan, Lola Kola, Emma Kolaru, Carlos López-Jaramillo, Parisa Mansoori, Dmytro Martsenkovskyi, Kate Martin, Joan Marsh, Benedict Daniel Michael, Fabian Musoro, Vardan Nersejan, Etheldreda Nakimuli-Mpungu (Co-Chair), Avi Nath, Timothy Nicholson, Kelvin Opiepie, Rory O’Connor, Soumitra Pathare, Lina Ruiz, Kerry Ressler, Alexandra Schuster, Maxime Taquet, Simon Wessely, Larry White.

Ayana Jordan has received research support from several sources, including the National Institute on Alcohol Abuse and Alcoholism (NIAAA; 5R01AA028778-04), the National Institute on Drug Abuse (NIDA; 1R01DA057651-01 and 5U01DA060441-04), the Substance Abuse and Mental Health Services Administration (SAMHSA; 5H79TI081358-04), and the National Cancer Institute (NCI; 1UC2CA293834-01). In addition, she has received a foundation grant from the Laurie M. Tisch Illumination Fund.

References

1. Xiong J, Lipsitz O, Nasri F, Lui LMW, Gill H, Phan L, Chen-Li D, Iacobucci M, Ho R, Majeed A, et al. Impact of COVID-19 pandemic on mental health in the general population: a systematic review. *J Affect Disord.* 2020;277:55-64. doi:10.1016/j.jad.2020.08.001.
2. Carr MJ, Steeg S, Webb RT, Kapur N, Chew-Graham CA, Abel KM, Hope H, Pierce M, Ashcroft DM. Effects of the COVID-19 pandemic on primary care-recorded mental illness and self-harm episodes in the UK: a population-based cohort study. *Lancet Public Health.* 2021;6(2):e124-e135. doi:10.1016/S2468-2667(20)30288-7.
3. Gessa GD, Price D. The impact of shielding during the COVID-19 pandemic on mental health: evidence from the English Longitudinal Study of Ageing. *Br J Psychiatry.* 2022;1-7. doi:10.1192/bjp.2022.44.
4. Smith K, Bhui K, Cipriani A. COVID-19, mental health and ethnic minorities. *Evid Based Ment Health.* 2020;23(3):89-90. doi:10.1136/ebmental-2020-300174.
5. Carvalho S, Coelho C, Kluwe-Schiavon B, Magalhães J, Leite J. The acute impact of the early stages of COVID-19 pandemic in people with pre-existing psychiatric disorders: a systematic review. *Int J Environ Res Public Health.* 2022;19(9):5140. doi:10.3390/ijerph19095140.
6. Wang W, Wu S. Knowledge management based on information technology in response to COVID-19 crisis. *Knowl Manag Res Pract.* 2020;19(4):468-474. doi:10.1080/14778238.2020.1860665.
7. Latonen S, Suominen R, Juppo A, Airaksinen M, Seeck H. Organisation of cross-sector collaboration and its influence on crisis-management effectiveness among pharmaceutical supply-chain stakeholders during the COVID-19 pandemic. *Public Health.* 2023;222:196-204. doi:10.1016/j.puhe.2023.06.042.
8. Daniel H, Bornstein S, Kane G. Addressing social determinants to improve patient care and promote health equity: an American College of Physicians position paper. *Ann Intern Med.* 2018;168(8):577-578. doi:10.7326/M17-2441.
9. Labrague LJ. Psychological resilience, coping behaviours and social support among health-care workers during the COVID-19 pandemic: a systematic review of quantitative studies. *J Nurs Manag.* 2021;29(8):1893-1905. doi:10.1111/jonm.13336.
10. Tayyib N. An action plan to address the mental-health impact of COVID-19 on communities: five effective strategies. *Psychol Serv.* 2021;18(3):316-324. doi:10.1037/ser0000575.
11. Nan X, Iles I, Yang B, Ma Z. Public health messaging during the COVID-19 pandemic and beyond: lessons from communication science. *Health Commun.* 2021;37(1):1-19. doi:10.1080/10410236.2021.1994910.
12. Meier A, Reinecke L. Computer-mediated communication, social media, and mental health: a conceptual and empirical meta-review. *Commun Res.* 2020;48(9):1182-1209. doi:10.1177/0093650220958224.

13. Gibson B, Schneider J, Talamonti D, Forshaw M. The impact of inequality on mental health outcomes during the COVID-19 pandemic: a systematic review. *Can Psychol.* 2021;62(1):101-126. doi:10.1037/cap0000272.
14. Lattie EG, Stiles-Shields C, Graham AK. An overview of and recommendations for more accessible digital mental health services. *Nat Rev Psychol.* 2022;1(2):87-100.
15. Knapp M, McDaid D, Amaddeo F, Constantopoulos A, Oliveira M, Salvador-Carulla L, Zechmeister I. Financing mental health care in Europe. *J Ment Health.* 2007;16(2):167-180. doi:10.1080/09638230701279857.
16. Henderson J, Chiodo D. Youth Wellness Hubs Ontario: an innovative model for engagement and equity-based considerations in funding allocations in youth mental health. *Can J Community Ment Health.* 2023;42(1):1-12. doi:10.7870/cjcmh-2023-011.
17. Fisher M. A theory of public wellbeing. *BMC Public Health.* 2019;19(1):1288. doi:10.1186/s12889-019-7626-z.
18. Bishop B, Vicary D, Browne A, Guard N. Public policy, participation and the third position: the implication of engaging communities on their own terms. *Am J Community Psychol.* 2009;43(1-2):111-121. doi:10.1007/s10464-008-9214-8.
19. Borges do Nascimento IJ, Pizarro AB, Almeida JM, Azzopardi-Muscat N, Gonçalves MA, Björklund M, Novillo-Ortiz D. Infodemics and health misinformation: a systematic review of reviews. *Bull World Health Organ.* 2022;100(9):544-561. doi:10.2471/BLT.21.287654.
20. Chen B, Chen X, Pan J, Liu K, Xie B, Wang W, Peng Y, Wang F, Li N, Jiang J. Dissemination and refutation of rumors during the COVID-19 outbreak in China: infodemiology study. *J Med Internet Res.* 2021;23(2):e22427. doi:10.2196/22427.
21. Prati G, Mancini AD. The psychological impact of COVID-19 pandemic lockdowns: a review and meta-analysis of longitudinal studies and natural experiments. *Psychol Med.* 2021;51(2):201-211.
22. Patwary MM, Bardhan M, Browning MHEM, Disha AS, Haque MZ, Billah SM, Kabir MP, Hossain MR, Alam MA, Shuvo FK, Salman A. Association between perceived trust of COVID-19 information sources and mental health during the early stage of the pandemic in Bangladesh. *Healthcare (Basel).* 2021;10(1):24. doi:10.3390/healthcare10010024.
23. Santos J. Reflections on the impact of “flatten the curve” on interdependent workforce sectors. *Environ Syst Decis.* 2020;40(2):185-188.
24. Bilge Y, Keleş E, Baydili K. The impact of COVID-19 vaccination on mental health. *J Loss Trauma.* 2021;27(3):285-288. doi:10.1080/15325024.2021.1963558.
25. Terry K, Yang F, Yao Q, Liu C. The role of social media in public health crises caused by infectious disease: a scoping review. *BMJ Glob Health.* 2023;8:e013515. doi:10.1136/bmjgh-2023-013515.
26. Banerjee D, Meena K. COVID-19 as an “infodemic” in public health: critical role of the social media. *Front Public Health.* 2021;9:610623. doi:10.3389/fpubh.2021.610623.
27. Madathil K, Rivera-Rodriguez J, Greenstein J, Gramopadhye A. Healthcare information on YouTube: a systematic review. *Health Inform J.* 2015;21(3):173-194. doi:10.1177/1460458213512220.
28. Yang H, Chan T, Tran H, Nguyen B, Lin H. See it, share it: what makes social-media content viral in the higher-education context? the power of positive affective content. *Inf Technol People.* 2024;37(1):12-30. doi:10.1108/itp-02-2023-0126.

29. Lee Y, Jeon YJ, Kang S, Shin JI, Jung YC, Jung SJ. Social media use and mental health during the COVID-19 pandemic in young adults: a meta-analysis of 14 cross-sectional studies. *BMC Public Health*. 2022;22(1):995. doi:10.1186/s12889-022-13409-0.
30. Yang X, Yip BHK, Mak ADP, Zhang D, Lee EKP, Wong SYS. The differential effects of social media on depressive symptoms and suicidal ideation among the younger and older adult population in Hong Kong during the COVID-19 pandemic: population-based cross-sectional survey study. *JMIR Public Health Surveill*. 2021;7(5):e24623. doi:10.2196/24623.
31. Ying Y, Jing C, Zhang F. The protective effect of health literacy on reducing college students' stress and anxiety during the COVID-19 pandemic. *Front Psychiatry*. 2022;13:878884. doi:10.3389/fpsyt.2022.878884.
32. Huang X, Wang X, Hu J, Xue Y, Wei Y, Wan Y, et al. Inadequate mental-health literacy and insufficient physical activity potentially increase the risks of anxiety and depressive symptoms in Chinese college students. *Front Psychiatry*. 2021;12:753695. doi:10.3389/fpsyt.2021.753695.
33. Cheng S, An D, Yao Z, Liu J, Ning X, Wong J, et al. Association between mental-health knowledge level and depressive symptoms among Chinese college students. *Int J Environ Res Public Health*. 2021;18(4):1850. doi:10.3390/ijerph18041850.
34. Hunt MG, Marx R, Lipson C, Young J. No more FOMO: limiting social media decreases loneliness and depression. *J Soc Clin Psychol*. 2018;37(10):751-768. doi:10.1521/jscp.2018.37.10.751.
35. Pedersen J, Rasmussen MGB, Sørensen SO, Mortensen SR, Olesen LG, Brage S, et al. Effects of limiting digital-screen use on well-being, mood, and biomarkers of stress in adults. *npj Ment Health Res*. 2022;1(1):14. doi:10.1038/s44184-022-00015-6.
36. World Health Organization. Building a response workforce: WHO competency framework for managing infodemics. Geneva: WHO; 2021.
37. World Health Organization. WHO EARS: Early AI-supported Response with Social Listening platform. Geneva: WHO; 2020.
38. Tangcharoensathien V, Calleja N, Nguyen T, Purnat T, D'Agostino M, Garcia-Saiso S, et al. Framework for managing the COVID-19 infodemic: methods and results of an online crowdsourced WHO technical consultation. *J Med Internet Res*. 2020;22(6):e19659. doi:10.2196/19659.
39. UNICEF. Risk Communication and Community Engagement (RCCE) Collective Service: Global Strategy, December 2020–May 2021. New York: UNICEF; 2021.
40. UNICEF Eastern and Southern Africa Regional Office. Social Media Monitoring and Rumor Management Strategy. Nairobi: UNICEF ESARO; 2020.
41. Collective Service. Data for Action Handbook: Guidance to Inform Risk Communication and Community Engagement. New York: UNICEF, IFRC, WHO; 2021.
42. World Health Organization Regional Office for Africa. Africa Infodemic Response Alliance (AIRA). Brazzaville: WHO AFRO; 2020.
43. Africa CDC. Infodemic Management and Social Listening: Building Capacity in Member States. Addis Ababa: Africa CDC; 2021.
44. European Commission. The Digital Services Act: Ensuring a Safe and Accountable Online Environment. Brussels: European Commission; 2022.

45. Office of the U.S. Surgeon General. Confronting Health Misinformation: The U.S. Surgeon General's Advisory on Building a Healthy Information Environment. Washington (DC): U.S. Dept of Health and Human Services; 2021.
46. Ruggieri S, Ingoglia S, Bonfanti RC, Lo Coco G. The role of online social comparison as a protective factor for psychological well-being: a longitudinal study during the COVID-19 quarantine. *Pers Individ Dif*. 2021;171:110486. doi:10.1016/j.paid.2020.110486.
47. Eriksen A. Building health-system resilience in and through service delivery. *Eur J Public Health*. 2023;33(4):789-798. doi:10.1093/eurpub/ckad160.
48. Haldane V, Morgan G. From resilient to transilient health systems: the deep transformation of health systems in response to the COVID-19 pandemic. *Health Policy Plann*. 2020;35(9):1241-1251. doi:10.1093/heapol/czaa169.
49. Moreno C, Wykes T, Galderisi S, Nordentoft M, Crossley N, Jones N, et al. How mental-health care should change as a consequence of the COVID-19 pandemic. *Lancet Psychiatry*. 2020;7(9):813-824. doi:10.1016/S2215-0366(20)30307-2.
50. Shore JH, Schneck CD, Mishkind MC. Telepsychiatry and the coronavirus disease 2019 pandemic: current and future outcomes of the rapid virtualization of psychiatric care. *JAMA Psychiatry*. 2020;77(12):1211-1212. doi:10.1001/jamapsychiatry.2020.1643.
51. Wilson S. Pandemic leadership: lessons from New Zealand's approach to COVID-19. *Leadership*. 2020;16(3):279-293. doi:10.1177/1742715020926782.
52. Cheng Y, Luo Y, Yan C, Ding Y. Trust in government and pandemic management: the case of Taiwan. *Int J Environ Res Public Health*. 2021;18(11):6024. doi:10.3390/ijerph18116024.
53. Oyekanmi O. Nigeria's #TakeResponsibility campaign: combating COVID-19 through citizen engagement. *J Afr Media Stud*. 2021;13(3):467-472. doi:10.1386/jams_00065_1.
54. Zarocostas J. How to fight an infodemic. *Lancet*. 2020;395(10225):676. doi:10.1016/S0140-6736(20)30461-X.
55. Smith K, Ostinelli E, Macdonald O, Cipriani A. COVID-19 and telepsychiatry: development of evidence-based guidance for clinicians. *JMIR Ment Health*. 2020;7(8):e21108. doi:10.2196/21108.
56. Torous J, Wykes T. Opportunities from the coronavirus disease 2019 pandemic for transforming psychiatric care with telehealth. *JAMA Psychiatry*. 2020;77(12):1205-1206. doi:10.1001/jamapsychiatry.2020.1640.
57. Wu G, Feder A, Cohen H, Kim J, Calderon S, Charney D, Mathé A. Understanding resilience. *Front Behav Neurosci*. 2013;7:10. doi:10.3389/fnbeh.2013.00010.
58. Baker JP, Berenbaum H. Emotional approach and problem-focused coping: a comparison of potentially adaptive strategies. *Cogn Emot*. 2007;21(1):118-195. doi:10.1080/02699930600562276.
59. Garrido-Hernansaiz H, Rodríguez-Rey R, Alonso-Tapia J. Coping and resilience are differently related depending on the population: a comparison between three clinical samples and the general population. *Int J Stress Manag*. 2020;27(4):304-309. doi:10.1037/str0000156.
60. Verdolini N, Amoretti S, Montejo L, García-Rizo C, Hogg B, Mezquida G, et al. Resilience and mental health during the COVID-19 pandemic. *J Affect Disord*. 2021;283:156-164. doi:10.1016/j.jad.2021.01.055.

61. Mækela MJ, Reggev N, Defelipe RP, Dutra N, Tamayo RM, Klevjer K, Pfuhl G. Identifying resilience factors of distress and paranoia during the COVID-19 outbreak in five countries. *Front Psychol.* 2021;12:661149. doi:10.3389/fpsyg.2021.661149.
62. Banerjee D, Sathyanarayana Rao TS, Kallivayalil RA, Javed A. Psychosocial framework of resilience: navigating needs and adversities during the pandemic—a qualitative exploration in Indian frontline physicians. *Front Psychol.* 2021;12:622132. doi:10.3389/fpsyg.2021.622132.
63. DeTore NR, Sylvia L, Park ER, Burke A, Levison JH, Shannon A, Choi KW, Jain FA, Coman DC, Herman J, et al. Promoting resilience in healthcare workers during the COVID-19 pandemic with a brief online intervention. *J Psychiatr Res.* 2022;146:228-233. doi:10.1016/j.jpsychires.2021.11.011.
64. Menculini G, Albert U, Bianchini V, Carmassi C, Carrà G, Cirulli F, Dell’Osso B, et al. Did we learn something positive out of the COVID-19 pandemic? Post-traumatic growth and mental health in the general population. *Eur Psychiatry.* 2022;64(1):e63. doi:10.1192/j.eurpsy.2021.2263.
65. Li Q, Hu J. Post-traumatic growth and psychological resilience during the COVID-19 pandemic: a serial mediation model. *Front Psychiatry.* 2022;13:780807. doi:10.3389/fpsyg.2022.780807.
66. Bovero A, Balzani S, Tormen G, Malandrone F, Carletto S. Factors associated with post-traumatic growth during the COVID-19 pandemic: a systematic review. *J Clin Med.* 2023;13(1):95. doi:10.3390/jcm13010095.
67. Van Bavel JJ, Baicker K, Boggio PS, Capraro V, Cichocka A, Cikara M, et al. Using social and behavioural science to support COVID-19 pandemic response. *Nat Hum Behav.* 2020;4(5):460-471. doi:10.1038/s41562-020-0884-z.
68. Ransing R, Ramalho R, Orsolini L, Adiukwu F, Gonzalez-Diaz JM, Larnaout A, et al. Infectious-disease-outbreak-related stigma and discrimination during the COVID-19 pandemic: drivers, facilitators, manifestations, and outcomes across the world. *Brain Behav Immun.* 2020;89:555-558. doi:10.1016/j.bbi.2020.05.007.
69. Percudani M, Corradin M, Moreno M, Indelicato A, Vita A. Mental health services in Lombardy during the COVID-19 outbreak. *Psychiatry Res.* 2020;288:112980. doi:10.1016/j.psychres.2020.112980.
70. Iyer SN, Mangala R, Shulman T, Joober R, Shah JL. Transforming youth mental health: implementation of a stepped-care model at Canada’s largest mental-health hospital during COVID-19. *Early Interv Psychiatry.* 2021;15(5):1286-1295. doi:10.1111/eip.13035.
71. Ministry of Health and Family Welfare, Government of India. National Mental Health Helpline “KIRAN”. New Delhi: MoHFW; 2020.
72. Ministère de l’Enseignement supérieur, de la Recherche et de l’Innovation. Dispositif “Chèque Psy Étudiant”. Paris: Government of France; 2021.
73. World Health Organization. Thailand’s 1 Million Village Health Volunteers: A Powerful COVID-19 Response. Geneva: WHO; 2020.
74. Hanvoravongchai P, Warakamin B, Coker R. Critical interactions between Global Fund-supported programs and health systems: Thailand case study. *Health Policy Plann.* 2010;25(Suppl 1):i53-i57. doi:10.1093/heapol/czq062.
75. Lee Y, Lui LMW, Chen-Li D, Liao Y, Mansur RB, Brietzke E, et al. Government response moderates the mental-health impact of COVID-19: a systematic review and

- meta-analysis of depression outcomes across countries. *J Affect Disord.* 2021;290:364-377. doi:10.1016/j.jad.2021.04.050.
76. Bu F, Steptoe A, Fancourt D. Depressive and anxiety symptoms in adults during the COVID-19 pandemic in England: a panel data analysis over two years. *PLoS Med.* 2023;20(4):e1004144. doi:10.1371/journal.pmed.1004144.
 77. Gloster AT, Lamniso D, Lubenko J, Presti G, Squatrito V, Constantinou M, et al. Impact of COVID-19 pandemic on mental health: an international study. *PLoS One.* 2020;15(12):e0244809. doi:10.1371/journal.pone.0244809.
 78. Rahman MA, Islam SMS, Tungpunkom P, Sultana F, Alif SM, Banik B, et al. COVID-19: factors associated with psychological distress, fear, and coping strategies among community members across 17 countries. *Glob Health.* 2021;17(1):117. doi:10.1186/s12992-021-00768-3.
 79. Egger D, Miguel E, Warren S, Shenoy A, Collins E, Karlan D, et al. Falling living standards during the COVID-19 crisis: quantitative evidence from nine developing countries. *Sci Adv.* 2021;7(6):eabe0997. doi:10.1126/sciadv.abe0997.
 80. Zangani C, Ostinelli E, Smith K, Hong J, Macdonald O, Reen G, et al. Impact of the COVID-19 pandemic on the global delivery of mental-health services and telemental health: systematic review. *JMIR Ment Health.* 2022;9(4):e38600. doi:10.2196/38600.
 81. Kuzman M, Vahip S, Fiorillo A, Beezhold J, Costa M, Skugarevsky O, et al. Mental-health services during the first wave of the COVID-19 pandemic in Europe: results from the EPA Ambassadors Survey and implications for clinical practice. *Eur Psychiatry.* 2021;64(1):e15. doi:10.1192/j.eurpsy.2021.2215.
 82. McAllister A, Fritzell S, Almroth M, et al. How do macro-level structural determinants affect inequalities in mental health? A systematic review of the literature. *Int J Equity Health.* 2018;17(1):180. doi:10.1186/s12939-018-0879-9.
 83. Claes N, Smeding A, Carré A. Mental-health inequalities during COVID-19 outbreak: the role of financial insecurity and attentional control. *Psychol Belg.* 2021;61(1):327. doi:10.5334/pb.1064.
 84. Fazio N, Morena D, Delogu G, Volonnino G, Manetti F, Padovano M, et al. Mental-health consequences of COVID-19 pandemic period in the European population: an institutional challenge. *Int J Environ Res Public Health.* 2022;19(15):9347. doi:10.3390/ijerph19159347.
 85. Kunzler A, Röthke N, Günthner L, Stoffers-Winterling J, Tüscher O, Coenen M, et al. Mental burden and its risk and protective factors during the early phase of the SARS-CoV-2 pandemic: systematic review and meta-analyses. *Glob Health.* 2021;17(1):95. doi:10.1186/s12992-021-00670-y.
 86. Pierce M, McManus S, Hope H, Hotopf M, Ford T, Hatch S, et al. Different mental-health responses to the COVID-19 pandemic: latent class trajectory analysis using longitudinal UK data. *SSRN Electron J.* 2021. doi:10.2139/ssrn.3784647.
 87. Fountoulakis KN, Karakatsoulis GN, Abraham S, Adorjan K, Ahmed HU, Alarcón RD, et al. The effect of different degrees of lockdown and self-identified gender on anxiety, depression and suicidality during the COVID-19 pandemic: data from the international COMET-G study. *Psychiatry Res.* 2022;315:114702. doi:10.1016/j.psychres.2022.114702.
 88. Zwar L, König H, Hajek A. Gender differences in mental health, quality of life, and caregiver burden among informal caregivers during the second wave of the COVID-19

- pandemic in Germany: a representative, population-based study. *Gerontology*. 2022;68(5):476-489. doi:10.1159/000523846.
89. Liu S, Yang L, Zhang C, Xu Y, Cai L, Ma S, et al. Gender differences in mental-health problems of healthcare workers during the coronavirus disease 2019 outbreak. *J Psychiatr Res*. 2021;137:393-400. doi:10.1016/j.jpsychires.2021.03.014.
 90. Proto E, Quintana-Domeque C. COVID-19 and mental-health deterioration by ethnicity and gender in the UK. *PLoS One*. 2021;16(1):e0244419. doi:10.1371/journal.pone.0244419.
 91. Pajuelo A, Ramos J, Lazo-Porras M. Anxiety, depression, and post-traumatic stress disorder symptomatology according to gender in healthcare workers during the COVID-19 pandemic in Peru. *Int J Environ Res Public Health*. 2022;19(19):11957. doi:10.3390/ijerph191911957.
 92. Abreu L, Koebach A, Díaz Ó, Carleial S, Hoeffler A, Stojetz W, et al. Life with Corona: increased gender differences in aggression and depression symptoms due to the COVID-19 pandemic burden in Germany. *Front Psychol*. 2021;12:689396. doi:10.3389/fpsyg.2021.689396.
 93. Mo P, Cheng Y, Lau J. Work-related factors on mental health among migrant factory workers in China: application of the demand-control and effort-reward imbalance model. *Health Soc Care Community*. 2020;29(4):1045-1054. doi:10.1111/hsc.13176.
 94. Solomou I, Constantinidou F. Prevalence and predictors of anxiety and depression symptoms during the COVID-19 pandemic and compliance with precautionary measures: age and sex matter. *Int J Environ Res Public Health*. 2020;17(14):4924. doi:10.3390/ijerph17144924.
 95. Bullinger LR, Klika B, Feely M, Ford D, Merrick M, Raissian K, et al. Paid family leave: an upstream intervention to prevent family violence. *J Fam Violence*. 2023;38(1):1-11. doi:10.1007/s10896-022-00486-3.
 96. Yakubovich AR, Bartsch A, Metheny N, Gesink D, O'Campo P. Housing interventions for women experiencing intimate partner violence: a systematic review. *Lancet Public Health*. 2022;7(1):e23-e35. doi:10.1016/S2468-2667(21)00208-3.
 97. US Preventive Services Task Force, Curry SJ, Krist AH, Owens DK, Barry MJ, Caughey AB, et al. Interventions to prevent perinatal depression: US Preventive Services Task Force recommendation statement. *JAMA*. 2019;321(6):580-587. doi:10.1001/jama.2019.0007.
 98. Pisavadia K, Spencer LH, Tuersley L, Coates R, Ayers S, Edwards RT. Health economic evaluations of preventative care for perinatal anxiety and associated disorders: a rapid review. *BMJ Open*. 2024;14(2):e068941. doi:10.1136/bmjopen-2022-068941.
 99. Vahia IV, Jeste DV, Reynolds CF. Older adults and the mental-health effects of COVID-19. *JAMA*. 2020;324(22):2253-2254. doi:10.1001/jama.2020.21753.
 100. Sterina E, Hermida A, Gerberi D, Lapid M. Emotional resilience of older adults during COVID-19: a systematic review of studies of stress and well-being. *Clin Gerontol*. 2022;45(1):4-19. doi:10.1080/07317115.2021.1928355.
 101. Feliciano L, Johanson K, Okun M, Walden A. Impacts of the coronavirus pandemic on the emotional and physical health of older adults compared with younger cohorts. *Clin Gerontol*. 2022;45(1):45-57. doi:10.1080/07317115.2021.1966561.
 102. Organisation for Economic Co-operation and Development (OECD). Supporting young people's mental health through the COVID-19 crisis [Internet]. Paris: OECD;

- 2021 May 12 [cited 2025 Sep 22]. Available from:
https://www.oecd.org/content/dam/oecd/en/publications/reports/2021/05/supporting-young-people-s-mental-health-through-the-covid-19-crisis_978cbeeb/84e143e5-en.pdf
103. Nelson KL, Powell BJ, Langellier B, Lê-Scherban F, Shattuck P, Hoagwood K, et al. State policies that impact the design of children's mental-health services: a modified Delphi study. *Adm Policy Ment Health*. 2022;49(5):834-847. doi:10.1007/s10488-022-01201-6.
 104. Dely B, Hye R, Prinz C; OECD Directorate for Employment, Labour and Social Affairs. What Worked Well in Social Protection During the COVID-19 Pandemic? (OECD Social, Employment and Migration Working Papers No. 325). Paris: OECD Publishing; 2025. doi:10.1787/b31ac155-en.
 105. Wels J, Booth C, Wielgoszewska B, Green MJ, Di Gessa G, Huggins CF, et al. Mental and social wellbeing and the UK Coronavirus Job Retention Scheme: Evidence from nine longitudinal studies. *Soc Sci Med*. 2022 Sep;308:115226. doi:10.1016/j.socscimed.2022.115226.
 106. Islam MI, Lyne E, Freeman J, Martiniuk A. A longitudinal study on the impact of emergency cash-transfer payments during the COVID-19 pandemic on coping among Australian young adults. *Sci Rep*. 2024;14(1):17523. doi:10.1038/s41598-024-68027-0.
 107. Leifheit KM, Pollack CE, Raifman J, Schwartz GL, Koehler RD, Rodriguez Bronico JV, Benfer EA, Zimmerman FJ, Linton SL. Variation in state-level eviction-moratorium protections and mental health among US adults during the COVID-19 pandemic. *JAMA Netw Open*. 2021;4(12):e2139585. doi:10.1001/jamanetworkopen.2021.39585.
 108. Nam J, Kwon SJ. Expansion of Child Tax Credits and mental health of parents with low income in 2021. *JAMA Netw Open*. 2024;7(2):e2356419. doi:10.1001/jamanetworkopen.2023.56419.
 109. Hsiang S, Haushofer J, Shapiro J, Miguel E, Warren S, Collins E, et al. World Bank/Innovations for Poverty Action (IPA) policy briefs on Kenya's COVID-19 cash-transfer expansions, documenting reductions in stress and food insecurity during the pandemic. Washington (DC): World Bank; 2021.
 110. Blofield M, Knaul FM, Calderón-Anyosa R, Peterman A, Franzoni JM, O'Donnell M, Bustreo F. A diagonal and social protection plus approach to meet the challenges of the COVID-19 syndemic: cash transfers and intimate partner violence interventions in Latin America. *Lancet Glob Health*. 2022;10(1):e148-e153. doi:10.1016/S2214-109X(21)00444-7.
 111. Thomeer MB, Moody MD, Yahirun J. Racial and ethnic disparities in mental health and mental health care during the COVID-19 pandemic. *J Racial Ethn Health Disparities*. 2023;10(2):961-976. doi:10.1007/s40615-022-01284-9.
 112. Pineros-Leano M, Pérez-Flores NJ, Damian K, Rodrigues K, Ortiz G, Simonovich SD. Mental health disparities in Latinx immigrant communities residing in the United States during COVID-19: implications for policy and practice. *Front Public Health*. 2022;10:1000233. doi:10.3389/fpubh.2022.1000233.
 113. Nakimuli-Mpungu E, Musisi S, Wamala K, Okello J, Ndyababangi S, Birungi J, et al. Effectiveness and cost-effectiveness of group support psychotherapy delivered by trained lay health workers for depression treatment among people with HIV in Uganda: a cluster-randomised trial. *Lancet Glob Health*. 2020;8(3):e387-e398. doi:10.1016/S2214-109X(20)30002-4.

114. Kidia K, Machando D, Dzoro V, Chibanda D, Abas M, Manda E, et al. Rural Friendship Bench: a qualitative study in Zaka district, Zimbabwe. *Soc Sci Med.* 2024;348:116791. doi:10.1016/j.socscimed.2024.116791.
115. Ransing R, Adiukwu F, Pereira-Sanchez V, Ramalho R, Orsolini L, Teixeira A, et al. National helpline for mental health during COVID-19 pandemic in India: new opportunity and challenges ahead. *Asian J Psychiatr.* 2020;54:102192. doi:10.1016/j.ajp.2020.102192.
116. Agberotimi S, Akinsola O, Oguntayo R, Olaseni A. Interactions between socioeconomic status and mental health outcomes in the Nigerian context amid COVID-19 pandemic: a comparative study. *Front Psychol.* 2020;11:559819. doi:10.3389/fpsyg.2020.559819.
117. Oginni O, Amiola A, Adelola A, Uchendu U. A commentary on the Nigerian response to the COVID-19 pandemic. *Psychol Trauma.* 2020;12(5):511-513. doi:10.1037/tra0000743.
118. Ahmed S, Ajisola M, Azeem K, Bakibinga P, Chen Y, Choudhury N, et al. Impact of the societal response to COVID-19 on access to healthcare for non-COVID-19 health issues in slum communities of Bangladesh, Kenya, Nigeria and Pakistan: results of pre-COVID and COVID-19 lockdown stakeholder engagements. *BMJ Glob Health.* 2020;5(8):e003042. doi:10.1136/bmjgh-2020-003042.
119. Ekoh P, George E, Ezulike C. Digital and physical social exclusion of older people in rural Nigeria in the time of COVID-19. *J Gerontol Soc Work.* 2021;64(6):629-642. doi:10.1080/01634372.2021.1907496.
120. Ola B, Olibamoyo O. COVID-19 in Nigeria: implications for prevalent public mental health challenges. *Ment Health Rev J.* 2020;25(3):177-184. doi:10.1108/mhrj-07-2020-0050.
121. Government of Canada. *Wellness Together Canada: Mental Health and Substance Use Support.* Ottawa: Government of Canada; 2020 [cited 2025 Sep 22]. Available from: <https://wellnesstogether.ca>
122. Halcomb EJ, Ashley C, Dennis S, et al. Telehealth use in Australian primary healthcare during COVID-19: a cross-sectional descriptive survey. *BMJ Open.* 2023;13:e065478. doi:10.1136/bmjopen-2022-065478.
123. Kinoshita S, Cortright K, Crawford A, Mizuno Y, Yoshida K, Hilty D, et al. Changes in telepsychiatry regulations during the COVID-19 pandemic: 17 countries and regions' approaches to an evolving healthcare landscape. *Psychol Med.* 2022;52(13):2606-2613. doi:10.1017/S0033291720004584.
124. Mindu T, Mutero IT, Ngcobo WB, Musesengwa R, Chimbari MJ. Digital mental health interventions for young people in rural South Africa: prospects and challenges for implementation. *Int J Environ Res Public Health.* 2023;20(2):1453. doi:10.3390/ijerph20021453.
125. Onu JU, Onyeka TC. Digital psychiatry in Nigeria: a scoping review. *S Afr J Psychiatr.* 2024;30:2115. doi:10.4102/sajpspsychiatry.v30i0.2115.
126. Serra E, Magalhães T. Telemedicine as an approach to the mental health of healthcare workers in Angola. *Int J Environ Res Public Health.* 2025;22(4):565. doi:10.3390/ijerph22040565.
127. Nakimuli-Mpungu E, Mutinye Kwesiga J, Mark Bwanika J, Musinguzi D, Nakanyike C, Iya J, et al. Developing and testing Tele-Support Psychotherapy through mobile phones for youth (15–30 years) with depression in Uganda. In: *Psychotherapy in the*

- Third Millennium – Cross-Cutting Themes and Proposals for Reflection [Internet]. London: IntechOpen; 2025. Available from: <http://dx.doi.org/10.5772/intechopen.1008155>
128. World Health Organization. WHO guideline: Recommendations on Digital Interventions for Health System Strengthening. Geneva: WHO; 2019 [cited 2025 Sep 22]. Available from: <https://www.who.int/publications/i/item/9789241550505>
 129. World Health Organization. Global Strategy on Digital Health 2020–2025. Geneva: WHO; 2021 [cited 2025 Sep 22]. Available from: <https://www.who.int/publications/i/item/9789240020924>
 130. Shaw J, Abejirinde IO, Agarwal P, Shahid S, Martin D. Digital health and equitable access to care. *PLOS Digit Health*. 2024;3(9):e0000573. doi:10.1371/journal.pdig.0000573.
 131. Owusu JT, Wang P, Wickham RE, Cottonham DP, Varra AA, Chen C, et al. Blended care therapy for depression and anxiety: outcomes across diverse racial and ethnic groups. *J Racial Ethn Health Disparities*. 2023;10(6):2731-2743. doi:10.1007/s40615-022-01450-z.
 132. Hassan M, Hassan N, Kassim E, Said Y. The relationship between financial wellbeing and mental health: a systematic literature review. *Asian Pac Soc Sci Rev*. 2021;7(2):92-95. doi:10.31580/APSS.V7I2.1780.
 133. Godinic D, Obrenovic B, Khudaykulov A. Effects of economic uncertainty on mental health in the COVID-19 pandemic context: social identity disturbance, job uncertainty and psychological well-being model. *Int J Innov Econ Dev*. 2020;6(1):32-47. doi:10.18775/ijied.1849-7551-7020.2015.61.2005.
 134. Tham WW, Sojli E, Bryant R, McAleer M. Common mental disorders and economic uncertainty: evidence from the COVID-19 pandemic in the US. *PLoS One*. 2021;16(12):e0260726. doi:10.1371/journal.pone.0260726.
 135. Li TH, Kamin L, George J, Saiz FS, Meyer P. Impact of the COVID-19 pandemic on treatment for mental health needs: a perspective on service use patterns and expenditures from commercial medical claims data. *BMC Health Serv Res*. 2023;23(1):163. doi:10.1186/s12913-023-09080-9.
 136. Silva-Valencia J, Lapadula C, Westfall JM, Gaona G, de Lusignan S, Kristiansson RS, et al. Effect of the COVID-19 pandemic on mental health visits in primary care: an interrupted time-series analysis from nine INTRePID countries. *EClinicalMedicine*. 2024;70:102533. doi:10.1016/j.eclinm.2024.102533.
 137. Chan VKY, Chai Y, Chan SSM, Luo H, Jit M, Knapp M, et al. Impact of COVID-19 pandemic on depression incidence and healthcare service use among patients with depression: an interrupted time-series analysis from a 9-year population-based study. *BMC Med*. 2024;22(1):169. doi:10.1186/s12916-024-03386-z.
 138. Rathnayaka I, Khanam R, Rahman M. The economics of COVID-19: a systematic literature review. *J Econ Stud*. 2022;50(1):1-25. doi:10.1108/jes-05-2022-0257.
 139. Conti B, Herr H, Jha P, Nettekoven Z. Macroeconomic policy and policy spaces during the COVID-19 pandemic: case studies from Germany, Brazil and India. *Eur J Econ Econ Policy Interv*. 2023;20(3):299-317. doi:10.4337/ejeep.2023.0111.
 140. Josephson A, Kilic T, Michler J. Socioeconomic impacts of COVID-19 in low-income countries. *Nat Hum Behav*. 2021;5(5):557-565. doi:10.1038/s41562-021-01096-7.

141. Picchioni F, Goulao L, Roberfroid D. The impact of COVID-19 on diet quality, food security and nutrition in low- and middle-income countries: a systematic review of the evidence. *Clin Nutr*. 2022;41(12):2955-2964. doi:10.1016/j.clnu.2021.08.015.
142. Du Z, Pandey A, Bai Y, Fitzpatrick M, Chinazzi M, Piontti A, et al. Comparative cost-effectiveness of SARS-CoV-2 testing strategies in the USA: a modelling study. *Lancet Public Health*. 2021;6(3):e184-e191. doi:10.1016/S2468-2667(21)00002-5.
143. Kirwin E, Rafferty E, Harback K, Round J, McCabe C. A net benefit approach for the optimal allocation of a COVID-19 vaccine. *Pharmacoeconomics*. 2021;39(10):1059-1073. doi:10.1007/s40273-021-01037-2.
144. Rayanakorn A, Leong S, Chaiprom P, Lee S. Cost-effectiveness of public-health strategies on COVID-19 control: a systematic review. *Prog Microbes Mol Biol*. 2022;5:a0000268. doi:10.36877/pmmb.a0000268.
145. Wang Q, Shi N, Huang J, Yang L, Cui T, Ai J, et al. Cost-effectiveness of public-health measures to control COVID-19 in China: a microsimulation modelling study. *Front Public Health*. 2022;9:726690. doi:10.3389/fpubh.2021.726690.
146. Fuller J, Hakim A, Victory K, Date K, Lynch M, Dahl B, et al. Mitigation policies and COVID-19-associated mortality — 37 European countries, January 23–June 30, 2020. *MMWR Morb Mortal Wkly Rep*. 2021;70(2):58-62. doi:10.15585/mmwr.mm7002e4.
147. Maya S, Kahn J, Lin T, Jacobs L, Schmidt L, Burrough W, et al. Indirect COVID-19 health effects and potential mitigating interventions: cost-effectiveness framework. *PLoS One*. 2022;17(8):e0271523. doi:10.1371/journal.pone.0271523.
148. Zhou L, Yan W, Li S, Yang H, Zhang X, Lu W, et al. Cost-effectiveness of interventions for the prevention and control of COVID-19: systematic review of 85 modelling studies. *J Glob Health*. 2022;12:05022. doi:10.7189/jogh.12.05022.
149. Rezapour A, Souresrafil A, Peighambari M, Heidarali M, Tashakori-Miyanroudi M. Economic evaluation of programs against COVID-19: a systematic review. *Int J Surg*. 2020;85:10-18. doi:10.1016/j.ijssu.2020.11.015.
150. Holmes EA, O'Connor RC, Perry VH, Tracey I, Wessely S, Arseneault L, et al. Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. *Lancet Psychiatry*. 2020;7(6):547-560. doi:10.1016/S2215-0366(20)30168-1.
151. Nochaiwong S, Ruengorn C, Thavorn K, Hutton B, Awiphan R, Phosuya C, et al. Global prevalence of mental health issues among the general population during the coronavirus disease-2019 pandemic: a systematic review and meta-analysis. *Sci Rep*. 2021;11:10173. doi:10.1038/s41598-021-89700-8.
152. Asamoah J, Jin Z, Sun G, Seidu B, Yankson E, Abidemi A, et al. Sensitivity assessment and optimal economic evaluation of a new COVID-19 compartmental epidemic model with control interventions. *Chaos Solitons Fractals*. 2021;146:110885. doi:10.1016/j.chaos.2021.110885.
153. Uganda Ministry of Health. Consolidated guidelines for the prevention and treatment of HIV and AIDS in Uganda. Kampala: Ministry of Health; 2023 [cited 2025 Sep 22]. Available from: <https://dsduganda.com/wp-content/uploads/2023/05/Consolidated-HIV-and-AIDS-Guidelines-20230516.pdf>
154. Matthews S, Cantor JH, Brooks Holliday S, Bialas A, Eberhart NK, Breslau J, McBain RK. National preparedness for 988 – the new mental-health emergency hotline in the United States. *Prev Med Rep*. 2023;33:102208. doi:10.1016/j.pmedr.2023.102208.

155. European Commission. Mental Health – Public Health [Internet]. Brussels: European Commission; [cited 2025 Sep 22]. Available from: https://health.ec.europa.eu/non-communicable-diseases/mental-health_en
156. World Health Organization. Comprehensive Mental Health Action Plan 2013–2030. Geneva: WHO; 2021 Sep 21 [cited 2025 Sep 22]. Available from: <https://www.who.int/publications/i/item/9789240031029>
157. Mental Health Commission of Canada. An E-Mental Health Strategy for Canada [Internet]. Ottawa: Mental Health Commission of Canada; 2024 [cited 2025 Sep 22]. Available from: <https://mentalhealthcommission.ca/wp-content/uploads/2024/09/An-E-Mental-Health-Strategy-for-Canada-FINAL.pdf>
158. Mental Health Commission (Australia). National Mental Health and Wellbeing Pandemic Response Plan [Internet]. Canberra: Mental Health Commission; 2020 [cited 2025 Sep 22]. Available from: <https://www.mentalhealthcommission.gov.au/sites/default/files/2024-03/national-mental-health-and-wellbeing-pandemic-response-plan.pdf>
159. Rasanathan K, Beltran MM, Biritwum-Nyarko AA, Blecher MS, Dybul M, Inoue H, et al. Navigating health-financing cliffs: a new era in global health. *Lancet*. 2025;405(10493):1893-1895. doi:10.1016/S0140-6736(25)00730-9.
160. Rashes ER, Koller D, Kraft C, Spencer N, Goldhagen J, Weitzman M. A world without US support: WHO funding cuts and the future of childhood health. *BMJ Paediatr Open*. 2025;9(1):e003533. doi:10.1136/bmjpo-2025-003533.
161. Faye CM. Rethinking global-health resilience amid donor-funding cuts. *Lancet Glob Health*. 2025;13(10):e1655-e1656. doi:10.1016/S2214-109X(25)00650-0.
162. Institute for Health Metrics and Evaluation (IHME). Funding lifesaving global health programs forecasted to reach 15-year low [Internet]. Seattle: IHME; [cited 2025 Sep 30]. Available from: <https://www.healthdata.org/news-events/newsroom/news-releases/funding-lifesaving-global-health-programs-forecasted-reach-15>
163. Panagi L, White SR, Pinto Pereira SM, Nugawela MD, Heyman I, Sharma K, et al. Mental health in the COVID-19 pandemic: a longitudinal analysis of the CLoCk cohort study. *PLoS Med*. 2024;21(1):e1004315. doi:10.1371/journal.pmed.1004315.
164. Larsen L, Schaubert SK, Holt T, et al. Longitudinal COVID-19 effects on child mental health: vulnerability and age-dependent trajectories. *Child Adolesc Psychiatry Ment Health*. 2023;17:104. doi:10.1186/s13034-023-00652-5.
165. Bernardini F, Attademo L, Rotter M, Compton MT. Social determinants of mental health as mediators and moderators of the mental-health impacts of the COVID-19 pandemic. *Psychiatr Serv*. 2021;72(7):767-769. doi:10.1176/appi.ps.202000393.
166. Kim H, Jung J. Social isolation and psychological distress during the COVID-19 pandemic: a cross-national analysis. *Gerontologist*. 2020;61(1):103-112. doi:10.1093/geront/gnaa168.
167. Pettinicchio D, Maroto M, Chai L, Lukk M. Findings from an online survey on the mental-health effects of COVID-19 on Canadians with disabilities and chronic health conditions. *Disabil Health J*. 2021;14(4):101085. doi:10.1016/j.dhjo.2021.101085.
168. Loades ME, Chatburn E, Higson-Sweeney N, Reynolds S, Shafran R, Brigden A, et al. Rapid systematic review: the impact of social isolation and loneliness on the mental health of children and adolescents in the context of COVID-19. *J Am Acad Child Adolesc Psychiatry*. 2020;59(11):1218-1239.e3. doi:10.1016/j.jaac.2020.05.009.

169. Cooper RE, Saunders KRK, Greenburgh A, et al. The effectiveness, implementation, and experiences of peer-support approaches for mental health: a systematic umbrella review. *BMC Med.* 2024;22:72. doi:10.1186/s12916-024-03260-y.
170. Borges do Nascimento IJ, Pizarro AB, Almeida JM, Azzopardi-Muscat N, Gonçalves MA, Björklund M, et al. Infodemics and health misinformation: a systematic review of reviews. *Bull World Health Organ.* 2022;100(9):544-561. doi:10.2471/BLT.21.287654.
171. Starvaggi I, Dierckman C, Lorenzo-Luaces L. Mental health misinformation on social media: review and future directions. *Curr Opin Psychol.* 2024;56:101738. doi:10.1016/j.copsyc.2023.101738.
172. Ivory A, Arelingaiah M, Janardhana N, et al. Qualitative assessment of evidence-informed adolescent mental-health policymaking in India: insights from project SAMA. *Health Res Policy Syst.* 2024;22:127. doi:10.1186/s12961-024-01184-w.
173. Wellcome Trust. Mental Health Award: Transforming Early Intervention for Anxiety, Depression and Psychosis in Young People [Internet]. London: Wellcome Trust; [cited 2025 Sep 22]. Available from: <https://wellcome.org/research-funding/schemes/mental-health-award-transforming-early-intervention>
174. National Institute of Mental Health (US). Global Mental Health Efficacy and Effectiveness Research Program [Internet]. Bethesda (MD): National Institutes of Health; [cited 2025 Sep 22]. Available from: <https://www.nimh.nih.gov/about/organization/cgmhr/global-mental-health-effectiveness-research-program>

Panel 1: Methods

Multi-disciplinary writing groups, including lived-experience contributors, were formed to lead each section according to topic expertise. Contributors met biweekly online over three months to scope evidence, review emerging findings, and prepare draft sections. During the writing process, joint working meetings were held to unify insights and advance the production and editorial work of the paper. A first draft was then consolidated, reviewed, and complemented by all Commission members.

A structured search of the literature (January 2020–December 2024) was undertaken to complement expert consultation. Three databases (PubMed, Embase, and PsycINFO) were searched for relevant English-language studies using controlled vocabulary and free-text keywords for COVID-19, mental disorders, interventions, and study designs. Full search terms are available in Appendix 1. Papers were screened by title, abstract, and full text using the Covidence Systematic Reviews Production Tool to remove duplicates and organise eligible studies for review by the working groups. Studies were purposively selected based on policy relevance and methodological robustness, with particular emphasis on systematic reviews, longitudinal studies, multi-country analyses, and reports with direct implications for public health and policy.

While the review process followed a systematic design, the rapidly evolving nature of the evidence base necessitated incorporation of emerging studies throughout writing and revision phases. Individual working groups re-ran searches when drafting their sections, and additions were discussed collaboratively to ensure accuracy and cohesion across sections. Throughout the process, MQ Mental Health Research served as the secretariat and project

manager, coordinating meetings, tracking timelines, and liaising with section leads, while the Lancet Psychiatry editorial team provided advice on structure and integration of findings.

Panel 2: Expert-by-experience commentary on Nigeria

COVID-19 placed significant strain on Nigeria's fragile mental health system, amplifying pre-existing service gaps as demand surged. In the first year of the pandemic (January 2020 to January 2021), global anxiety and depression levels rose by an estimated 25%¹¹⁶, but Nigeria's response was constrained by limited resources. The government introduced a 24-hour mental health counselling hotline as a lifeline¹¹⁷, yet awareness was low, and the country faced a shortage of trained professionals to meet the needs of an estimated 60 million people with mental health conditions.

Civil society actors filled some of these gaps. For example, the LEAD Community Foundation provided free psychosocial services and training to urban slum dwellers¹¹⁸. However, outreach rarely reached rural areas, where digital divides and weak infrastructure exacerbated isolation. Strict containment measures, including lockdowns and distancing, conflicted with cultural norms of close-knit communal living, leading to heightened social anxiety, depression, and PTSD¹¹⁹. Repurposing of mental health facilities as isolation centres further reduced service availability, while mask mandates increased distress for individuals with respiratory conditions.

Underlying poverty, weak health systems, and stigma around mental illness compounded these challenges, deterring many from seeking support¹²⁰. Addressing these gaps requires more inclusive digital outreach, expanded awareness campaigns, and culturally sensitive interventions that extend beyond urban centres to reach rural communities.

