IPPO The International Public Policy Observatory

# COVID-19 and population mental health: a systematic review

## EXECUTIVE SUMMARY

Kelly Dickson, Rosa Mendizabal-Espinosa, Carol Vigurs
Laura Meehan, Aisling Draper, Sum Yue (Jessica) Ko
Selam Petros, Celine Nguyen, Claire Stansfield

November 2022

UKRI Economic and Social Research Council

# COVID-19 and population mental health: a systematic review

EXECUTIVE SUMMARY

Kelly Dickson, Rosa Mendizabal-Espinosa, Carol Vigurs, Laura Meehan, Aisling Draper
Sum Yue (Jessica) Ko, Selam Petros, Celine Nguyen, Claire Stansfield


**Author affiliations**

- Kelly Dickson, EPPI Centre, UCL Social Research Institute
- Rosa Mendizabal-Espinosa, EPPI Centre, UCL Social Research Institute
- Carol Vigurs, EPPI Centre, UCL Social Research Institute
- Laura Meehan, EPPI Centre, UCL Social Research Institute
- Aisling Draper, EPPI Centre, UCL Social Research Institute
- Sum Yue (Jessica) Ko, EPPI Centre, UCL Social Research Institute
- Selam Petros, EPPI Centre, UCL Social Research Institute
- Celine Nguyen, EPPI Centre, UCL Social Research Institute
- Claire Stansfield, EPPI Centre, UCL Social Research Institute

**Funding & funder involvement**

This review was undertaken by the EPPI Centre as a partner of the International Public Policy Observatory (IPPO) (https://covidandsociety.com) which is ESRC-funded.

**Conflicts of interest**

There were no conflicts of interest in the writing of this report.

**Contributions**

The opinions expressed in this publication are not necessarily those of the EPPI Centre or the funders. Responsibility for the views expressed remains solely with the authors.

This report should be cited as: Dickson K, Mendizabal-Espinosa R, Vigurs C, Meehan L, Draper A, Ko SY(J), Petros S, Nguyen C, Stansfield C (2022) *COVID-19 and population mental health.* London: EPPI Centre, UCL Social Research Institute, UCL Institute of Education, University College London.

**Acknowledgements**

We would like to thank a number of student research assistants for volunteering their free time to contribute to all stages of this review while completing their studies: Aisling Draper, Celine Nguyen, Laura Meehan, and Sum Yue (Jessica) Ko. The research has benefitted greatly from their diligence and commitment to social science. We would also like to acknowledge the support of members of the Steering Board created to help with the project, namely Prof. Siobhan O'Neill, Prof. Ann John and Dr Polly Waite, as well as the members of the IPPO team Prof. Geoff Mulgan, Prof. Muiris MacCarthaigh, Ayden Wilson, and Sarah O'Meara, alongside initial discussions with Eleanor Williams. Our gratitude also extends to the EPPI Centre and their role in co-ordinating the International Public Policy Observatory: Dr Ian Shemilt, Prof. James Thomas and Prof. David Gough.

Cover design by: Lionel Openshaw

ISBN: 978-1-911605-35-5

# EXECUTIVE SUMMARY

## BACKGROUND

The COVID-19 pandemic and related mitigation responses have impacted social, financial, and economic spheres globally. An increase in the incidence of mental health problems at population level has been reported against this backdrop, with studies suggesting that the prevalence of mental health problems during the COVID-19 pandemic is greater than pre-pandemic estimates (Nochaiwong et al., 2021). Population-level initiatives to mitigate the mental health problems arisen from the COVID-19 pandemic and other crises have been described in the literature but have not always been collated in a way that can directly inform policy decision-making (Kola, 2021). Consequently, policy calls to identify effective interventions to address poor mental health exacerbated by the pandemic continue to be made (Santomauro et al., 2021). However, identifying effective interventions and planning feasible and sustainable scale-up remains a challenge.

## REVIEW AIMS AND QUESTIONS:

To meet policy demand for collated evidence on population-level initiatives to mitigate the mental health problems arisen from the COVID-19 pandemic, IPPO is conducting a systematic review of international evidence to answer the following question:

***What are the most effective, scalable interventions to address widespread mental health issues that have surfaced during the COVID-19 pandemic?***

This will entail conducting a multi-component systematic review to answer review questions (RQ) on the:

1) nature and extent of mental health issues arising during covid-19, to inform the focus on
2) the effectiveness of population-level mental health interventions and
3) the factors potentially influencing scale-up of mental health interventions

Alongside this systematic review, the IPPO team has produced further materials to help policymakers better understand how governments have responded to the widespread mental health issues that have surfaced during the COVID-19 pandemic, and highlight key findings about the effectiveness and scalability of mental health and psychosocial interventions.

## REVIEW APPROACH AND SCOPE

Initial scoping for this review highlighted that an overview of reviews design was most appropriate for RQ1 and RQ2. Firstly, the IPPO map indicated that a number of systematic reviews on the prevalence of mental health issues had been published since the start of the pandemic, and secondly during initial screening for RQ2 and RQ3, we identified a number of systematic reviews focused on the effectiveness of mental health interventions delivered to whole populations. Using similar transparent methods to a systematic review, an overview of reviews also aims to make best use of existing research literature. For RQ3, process and contextual detail about the range of factors to consider when scaling-up interventions was more readily available in primary studies. To answer RQ1 we included systematic reviews published from 2021 that had critically appraised and statistically combined data on prevalence of, anxiety, depression, and PTSD in the general population. To answer RQ2, we also prioritised reviews that had conducted a risk of bias of included studies and evaluated the effectiveness of mental health and psychosocial interventions (MHPSS) on anxiety, depression and PTSD using meta-analysis. For RQ3 we included primary studies with data on scale up of MHPSS interventions. Further methodological details are provided in the technical report.

# KEY FINDINGS

## RQ1: What is the nature and extent of mental health issues in the general population?

Since 2021, a total of 19 reviews have provided pooled estimate of effects for anxiety (N=15), depression (N=14) and post-traumatic stress (N=6) amongst the general population.

- **Anxiety**: when comparing with pre-pandemic data two reviews found an **increase in anxiety**. Pooled prevalence varied between the remaining meta-analysis, ranging from 21.0% to 52.6%.
- **Depression**: when comparing with pre-pandemic data two reviews found a **moderate increase** in depression. The pooled prevalence of the remaining reviews ranged from 21.3% to 34.3%.
- **PTSD/PTSS** The pooled prevalence of post-traumatic stress in the general population ranged from 9% (CI: not reported) to 27% (95% CI: 20.0–35.6%).

## RQ2: Are population-level MHPSS interventions effective for reducing anxiety, depression and PTSD?

Seventeen reviews, nine investigating children and young people and eight investigating adults, were judged to be of high and medium quality and included findings from meta-analysis of outcome data. Overall, there is review-level evidence that psychological interventions, delivered at population-level, can have a positive impact on preventing and treating depression, anxiety, and PTSD. A summary of the findings is below:

### Children and young people

- Reviews of **school-based interventions** report **evidence of positive effect** on:
  - CBT for the universal and targeted prevention of anxiety at primary schools
  - CBT and CBT with psychoeducation for universal prevention of anxiety and depression in secondary schools
  - Mindfulness/relaxation for universal prevention of anxiety in secondary schools
  - Cognitive–behavioural with IPT for universal prevention of depression in secondary schools
  - Third wave (e.g., acceptance and commitment therapy) for universal prevention of depression
  - Psychological therapies for indicated prevention of anxiety and depression in secondary schools
- **No evidence of difference** was found between intervention and control groups for
  - Universal or targeted prevention of depression in primary schools
  - Targeted prevention of anxiety or depression in secondary schools
- Reviews of **digital intervention** report **evidence of positive effect** on:
  - CBT-based interventions delivered via the internet, smartphone or mobile apps for treating depression and anxiety
- Reviews of **community-based interventions** report **evidence of positive effect** on
  - CBT for treating anxiety and depression
  - Psychotherapy for treating depression
  - A range of trauma-informed CBT and psychotherapeutic approaches for treating PTSD (see below).
- **No evidence of difference** was found between intervention and control groups for treatment of PTSD when delivering supportive counselling or family therapy

### Adults

- Reviews of **workplace interventions** report **evidence of positive effect** on:
  - Mindfulness training intervention for universal prevention of anxiety and depression.
  - Psychoeducation for universal prevention of depression
  - Cognitive behavioural interventions, and self-help interventions combined with exercise for indicated prevention of depression.
- Reviews of **digital intervention** report **evidence of positive effect** on:
  - CBT and ACT based smartphone apps for preventing and treating anxiety
  - Compositive psychological interventions for treatment of anxiety (e.g., mindfulness, iCBT, iACT)
  - Internet-based CBT for treatment of anxiety, depression and PTSD
- They also report ***no evidence of difference*** for
  - CBT and ACT based smartphone apps for treatment of PTSD when comparted to control groups
- Reviews of **community-based interventions** report **evidence of positive effect** on:
  - Stress Control Programmes for preventing anxiety and depression
  - IAPT and CBT based psychological therapies for treating anxiety and depression

## RQ3: What factors potentially influencing scale-up of mental health interventions?

A total of 87 primary studies provided evidence on scaling up of mental health and psychosocial interventions. Scale parameters: (e.g., intended reach) included:

- **Transnational**: e.g.not being limited within physical or political spatial boundaries
- **System wide**: e.g., the integration of services, such as integrating new mental health care services into general health care systems or integrating services into primary care.
- **Place-based** e.g., within the boundaries of a community, nation or state or smaller place-based communities such as schools, universities, or workplaces.

The **factors** presented below suggest that **programmes may be more likely to achieve scale-up** if they:

- **Intervention characteristics:**
  - Increase access to services across time and place by digitising interventions and making them available online
  - Expand the workforce by task shifting or task sharing from specialists to non-specialists
  - Use technology and online provision to train non specialists and speed up workforce availability
  - Enable self-referral and make mental health interventions more open access
- **Resource related factors:**
  - Secure policy support and government funding for scaling by demonstrating evidence of impact
  - Identify when additional resource is needed for scale-up to support greater implementation success
  - Match service level to needs by identifying care pathways, signposting, or stepped care
  - Integrate mental health services into primary care to make more efficient use of resources
- **Working together:**
  - Employ effective leaders to gain lasting buy-in from stakeholders on scale-up of services
  - Include knowledgeable local champions to promote new services at set- up and maintenance
  - Gain the buy in of multi-stakeholders, including the implementors of programmes
- **Programme fidelity** (to ensure scale up happens as intended):
  - Provide training fidelity and knowledge transfer to provide skills for consistency in provision
  - Use guidelines, templates, manuals to provide a common shareable framework for delivery

- **Monitoring and Evaluation:**
  - Use benchmarks and indicators to measure progress against and support future investment
  - Include ongoing evaluation of the quality and feasibility of services and track scale-up progress
  - Standardize training and adopt recognised accreditation models to disseminate the programme more widely and implement best practice while seeking greater reach
- **Test the acceptability of an intervention prior to scale-up**
  - Assess acceptability to implementors to anticipate potential organisational changes needed
  - Assess acceptability to service users to ensures services are meeting needs and reach
- **Contextual factors:**
  - Engage with the socio-political context of programme implementation to assess and ensure fit
  - Consider cultural factors and adaption needs by integrating local knowledge and practices with evidence-based programmes to contribute to contextually appropriate service delivery.
- **Combine supply side and demand side approaches**
  - Use resource mapping to identifying population needs and service gaps.
  - Take proactive efforts to raise awareness of the programmes in the target community.
  - Minimising barriers to service use through campaigns to reduce stigma towards mental ill health

## Implications for policy and practice

- The evidence-base for the effectiveness of population-mental health and psychosocial interventions continues to gain traction. However, if effective mental health and psychosocial interventions are to be made available at population-level, they need to be scaled appropriately. Policy and practice support for scale-up is critical in this endeavour, and more so when scaling requires intervention, organisational and system-level changes. Government commitment in the form of policy initiatives and resource allocation is key to ensuring the sustainable impact of scaled intervention. Feasibility and cost-effectiveness analysis, prior to scale-up and throughout implementation, could also help inform the success of scale-up strategies.
- There is consistent evidence on the effectiveness of **community-based** population-level mental health services for treating symptoms of anxiety, depression and PTSD. Large-scale nationwide programmes, such as Increasing Access to Psychological Services (IAPT), which provides a stepped-care approach to maximise availability of services to need (e.g., low to high intensity CBT, counselling interpersonal therapy) is now very well established in England and Wales. The rollout of similar public mental health care in other regions would require significant government policy buy-in to enable and maintain any infrastructure changes needed. It would also require an investment in human resource to establish a trained and competent workforce and support and any organisational culture changes identified.
- The review-level evidence for **school-based** prevention interventions is mixed. While findings suggest that universal and targeted prevention can work to delay the onset or worsening of anxiety symptoms in primary schools, replication of results were not found for depression. Similarly, findings for interventions delivered in secondary schools suggested that CBT-based approaches work for universal prevention of anxiety and depression, but not targeted prevention. While there is evidence of effectiveness for indicated prevention in adolescents. To address this, it might be useful to consider taking a stepped care approach in schools. For example, providing universal prevention interventions for all students alongside targeted individualised support for children and young people with elevated symptoms. The school will continue to be a sit in which to reach large numbers of children and young people, but more understanding of how interventions need to be tailored to meet their needs as they develop is required.

- There are a variety of effective universal and indicated **workplace prevention** interventions for depression and anxiety. Sustained, long-term investment in occupation-based mental health interventions by employers, ensuring they are both acceptable and accessible to employees, continues to be an important route when seeking to reach a large proportion of the adult population and support ongoing mental health efforts in light of the pandemic. The workplace also provides an opportunity to implement key scale up-strategies, such as: adopting effective leadership and deploying champions to promote mental health initiatives, engaging with multi-sectorial partners to provide on and off-site services (e.g., employee assistance programmes), using benchmarks and indicators to measure progress against and incorporating ongoing evaluation of the quality and feasibility of services to track effectiveness and scale-up progress.

- Although the evidence-base for the effectiveness of **digital and mobile app interventions** is currently modest, with greater effect sizes for internet-delivered interventions with professional input, the potential scale-up of specialist and non-specialist online psychological support and increasing transnational reach of mental health provision remains. Thus further consideration of the role of digital mental health, in the prevention and treatment of mental health symptoms as part of a stepped-care approach to service delivery is warranted. Online platforms also provide a resource efficient way to reach and train a workforce necessary for the delivery of mental health services, on and offline, including provision of supervision and cascading of best practice to ensure fidelity. This of course, is particularly salient in the context of COVID-19 and any future infectious disease crises, as many mental health services remain virtual as we continue to use a hybrid model of working.

- As highlighted, there is consistent evidence of improving intervention reach and scale-up of mental health services through **stepped care models** of provision. That is, where low intensity and brief interventions are offered as a first-line approach, with more intensive interventions made available for those with more severe needs. Taking a stepped care approach can be supported by **task-shifting**, where lower severity mental health needs can be shifted to non-specialists, (with referral to specialists at higher level of needs if required), enabling greater access to metal health services that would otherwise be the case if providers needed extensive training.

- However, in most scale-up scenarios, there will be a need to substantially enlarge the mental health workforce to scale interventions to effectively target large population with prevention needs and smaller populations of people who require more intensive treatments. This can be supported by **using guidelines, templates, manuals** to provide a common intervention framework and ensure intervention fidelity, as stated, by utilising digital platforms to support and train the workforce and speed up their availability.

- In the aftermath of COVID-19, the key to the scale up of mental health provision is being aware of and meeting demand needs. National and regional policy and practice initiatives can achieve scale-up by setting up strategic partnerships, with multi-stakeholders, which integrates local knowledge alongside knowledge of evidence-based mental health interventions. Doing so, can inform the maximisation of resources, how best to adapt interventions, and build a strong leadership team and trained workforce to implement services, as closely as intended to achieve intended reach. In the long-term, these mental health strategic partnerships can contribute knowledge on how to scale and deliver mental health programmes at population level and support best practice for similar initiatives in the future.

# REFERENCES

## Included systematic reviews of prevalence (N=98)

**Starred reviews included in findings*


Alimoradi, Z., Broström, A., Tsang Hector, W. H., Griffiths Mark, D., Haghayegh, S., Ohayon Maurice, M., Lin, C.-Y. & Pakpour Amir, H. (2021) Sleep problems during COVID-19 pandemic and its' association to psychological distress: A systematic review and meta-analysis. *Eclinicalmedicine*, 36, 100916-100916.

Amorós-Reche, V., Belzunegui-Pastor, À., Hurtado, G. & Espada Jose, P. (2022) Emotional Problems in Spanish Children and Adolescents during the COVID-19 Pandemic: A Systematic Review. *Clinica Y Salud*, 000-000.

Appleton, R., Williams, J., Juan Norha Vera, S., Needle Justin, J., Schlief, M., Jordan, H., Rains Luke, S., Goulding, L., Badhan, M., Roxburgh, E., Barnett, P., Spyridonidis, S., Tomaskova, M., Mo, J., Harju-Seppänen, J., Haime, Z., Casetta, C., Papamichail, A., Lloyd-Evans, B., Simpson, A., Sevdalis, N., Gaughran, F. & Johnson, S. (2021) Implementation, adoption and perceptions of telemental health during the COVID-19 pandemic: a systematic review. *Medrxiv*.

Araujo, L. A., Veloso, C. F., Souza, M. C., Azevedo, J. M. C. & Tarro, G. (2020) The potential impact of the COVID-19 pandemic on child growth and development: a systematic review. *Jornal de Pediatria*, 23, 23.

Arora, T., Grey, I., Östlundh, L., Lam Kin Bong, H., Omar Omar, M. & Arnone, D. (2020) The prevalence of psychological consequences of COVID-19: A systematic review and meta-analysis of observational studies. *Journal Of Health Psychology*.

Balakrishnan, V., Seong Ng, K., Kaur, W., Govaichelvan, K. & Lee Zhen, L. (2022) COVID-19 Depression and Its Risk Factors in Asia Pacific - A Systematic Review and Meta-analysis. *Journal Of Affective Disorders*, 298, 47-56.

Basso, M., Visintini, E., Achil, I., Fabris, S., Mattiussi, E., Danielis, M. & Palese, A. (2021) The experience of individuals placed in quarantine: A systematic review, meta-summary, and meta-synthesis. *Public Health Nursing*.

*Blasco-Belled, A., Tejada-Gallardo, C., Fatsini-Prats, M. & Alsinet, C. (2022) Mental health among the general population and healthcare workers during the COVID-19 pandemic: A meta-analysis of well-being and psychological distress prevalence. *Current Psychology*.

Blessin, M., Kunzler, A., Stoffers-Winterling, J., Mussig, M., Yuen, K. S. L., Tuscher, O., Lieb, K., Rothke, N., Thrul, J., Kreuter, F., Sprengholz, P., Betsch, C., Stieglitz, R. D. & Gilan, D. (2020) Psychomorbidity, resilience, and exacerbating and protective factors during the SARS-CoV-2-pandemic'a systematic literature review and results from the German COSMO-PANEL. *Deutsches Ärzteblatt International*, 117(28), 625-632.

Boden, M., Cohen, N., Froelich Jessilyn, M., Hoggatt Katherine, J., Magid Hoda, S. A. & Mushiana Swapandeep, S. (2021) Mental disorder prevalence among populations impacted by coronavirus pandemics: A multilevel meta-analytic study of COVID-19, MERS & SARS. *General Hospital Psychiatry*, 70, 124-133.

Bueno-Notivol, J., Gracia-Garcia, P., Olaya, B., Lasheras, I., Lopez-Anton, R. & Santabarbara, J. (2020) Prevalence of depression during the COVID-19 outbreak: A meta-analysis of community-based studies. *International Journal of Clinical & Health Psychology*, 21(1).

Bussières, E.-L., Malboeuf-Hurtubise, C., Meilleur, A., Mastine, T., Hérault, E., Chadi, N., Montreuil, M., Généreux, M., Camden, C., Team, P.-C., Roberge, P., Lane, J., Jasmin, E., Kalubi, J.-C., Hurtubise, K., Bach, G., Chrysagis, M., Turner, M.-P. & Gauvin, C. (2021) Consequences of the COVID-19 Pandemic on Children's Mental Health: A Meta-Analysis. *Frontiers In Psychiatry*.

*Castaldelli-Maia João, M., Marziali Megan, E., Lu, Z. & Martins Silvia, S. (2021) Investigating the effect of national government physical distancing measures on depression and anxiety during the COVID-19 pandemic through meta-analysis and meta-regression. *Psychological Medicine*, 1-46.

Cavicchioli, M., Ferrucci, R., Guidetti, M., Canevini, M. P., Pravettoni, G. & Galli, F. (2021) What Will Be the Impact of the Covid-19 Quarantine on Psychological Distress? Considerations Based on a Systematic Review of Pandemic Outbreaks. *Healthcare*, 9(1), 101.

*Chekole Yigrem, A. & Abate Semagn, M. (2021) Global prevalence and determinants of mental health disorders during the COVID-19 pandemic: A systematic review and meta-analysis. *Annals Of Medicine And Surgery*, 68, 102634.

Chen, J., Farah, N., Dong Rebecca, K., Chen Richard, Z., Xu, W., Yin, J., Chen Bryan, Z., Delios Andrew, Y., Miller, S., Wan, X., Ye, W. & Zhang Stephen, X. (2021a) Mental Health during the COVID-19 Crisis in Africa: A Systematic Review and Meta-Analysis. *International Journal Of Environmental Research And Public Health*, 18(20), 10604.

Chen, J., Farah, N., Rk, D., Rz, C., Xu, W., Yin, A., Bz, C., Delios, A., Miller, S., Wan, X. & Sx, Z. (2021b) The Mental Health Under the COVID-19 Crisis in Africa: A Systematic Review and Meta-Analysis. *Medrxiv*.

*Cheung, T., Cheng Calvin Pak, W., Fong Tommy Kwan, H., Sharew Nigussie, T., Anders Robert, L., Xiang Yu, T. & Lam Simon, C. (2022) Immediate psychological impact on healthcare workers, general population and affected individuals of SARS and COVID-19: A systematic review and meta-analysis (Preprint).

Cooke, J. E., Eirich, R., Racine, N. & Madigan, S. (2020) Prevalence of posttraumatic and general psychological stress during COVID-19: A rapid review and meta-analysis. *Psychiatry Research*, 292.

Cunning, C. & Hodes, M. (2021) The COVID-19 pandemic and obsessive-compulsive disorder in young people: Systematic review. *Clinical Child Psychology And Psychiatry*, 13591045211028169-13591045211028169.

Cénat Jude, M., Blais-Rochette, C., Kokou-Kpolou Cyrille, K., Noorishad, P.-G., Mukunzi Joana, N., McIntee, S.-E., Dalexis Rose, D., Goulet, M.-A. & Labelle, P. (2020) Prevalence of Symptoms of Depression, Anxiety, Insomnia, Posttraumatic Stress Disorder, and Psychological Distress among Populations Affected by the COVID-19 Pandemic: A Systematic Review and Meta-Analysis. *Psychiatry Research Neuroimaging*, 113599.

*da Silva, M. L., Rocha, R. S. B., Buheji, M. & et al. (2021) A systematic review of the prevalence of anxiety symptoms during coronavirus epidemics. *Journal of Health Psychology*, 26(1), 115-125.

Damiano Rodolfo, F., Di Santi, T., Beach, S., Pan Pedro, M., Lucchetti Alessandra, L., Smith Felicia, A., Forlenza Orestes, V., Fricchione Gregory, L., Miguel Eurípedes, C. & Lucchetti, G. (2021) Mental health interventions following COVID-19 and other coronavirus infections: a systematic review of current recommendations and meta-analysis of randomized controlled trials. *Revista Brasileira De Psiquiatria*.

de Laia Almeida Isabelle, L., Rego Jaqueline, F., Teixeira Amanda Carvalho, G. & Moreira Marília, R. (2021) Social isolation and its impact on child and adolescent development: a systematic review. *Revista Paulista De Pediatria*, 40.

Dubé Justin, P., Smith Martin, M., Sherry Simon, B., Hewitt Paul, L. & Stewart Sherry, H. (2021) Suicide behaviors during the COVID-19 pandemic: A meta-analysis of 54 studies. *Psychiatry Research-Neuroimaging*, 301, 113998.

Farooq, S., Tunmore, J., Ali, W. & Ayub, M. (2021) Suicide, self-harm and suicidal ideation during COVID-19: a systematic review. *Psychiatry Research-Neuroimaging*, 114228.

Fong, V. & Iarocci, G. (2020) Child and Family Outcomes Following Pandemics: A Systematic Review and Recommendations on COVID-19 Policies. *Journal of Pediatric Psychology*, 45(10), 1124-1143.

Hawton, K. (2020) The impact of the COVID-19 pandemic on self-harm and suicidal behaviour: a living systematic review [version 1; peer review: 1 approved]. *F1000 Research*.

Henssler, J., Stock, F., van Bohemen, J. & et al. (2020) Mental health effects of infection containment strategies: quarantine and isolation-a systematic review and meta-analysis. *European Archives of Psychiatry and Clinical Neuroscience*, 1-12.

Hossain, M., Rahman, M., Trisha Nusrat, F., Tasnim, S., Nuzhath, T., Hasan Nishat, T., Clark, H., Das, A., McKyer, E. L. J., Ahmed Helal, U. & Ma, P. (2021) Prevalence of anxiety and depression in South Asia during COVID-19: A systematic review and meta-analysis. *Heliyon*, 7(4).

Jahrami, H., BaHammam Ahmed, S., Bragazzi Nicola, L., Saif, Z., Faris, M. & Vitiello Michael, V. (2020) Sleep problems during COVID-19 pandemic by population: a systematic review and meta-analysis. *Journal Of Clinical Sleep Medicine*.

Jones Elizabeth, A. K., Mitra Amal, K. & Bhuiyan Azad, R. (2021) Impact of COVID-19 on Mental Health in Adolescents: A Systematic Review. *International Journal Of Environmental Research And Public Health*, 18(5), 2470.

Kahil, K., Cheaito, M. A., El Hayek, R. & et al. (2021) Suicide during COVID-19 and other major international respiratory outbreaks: A systematic review. *Asian Journal of Psychiatry*, 56, 102509.

*Kan Fatemeh, P., Raoofi, S., Rafiei, S., Khani, S., Hosseinifard, H., Tajik, F., Raoofi, N., Ahmadi, S., Aghalou, S., Torabi, F., Dehnad, A., Rezaei, S., Hosseinipalangi, Z. & Ghashghaee, A. (2021) A systematic review of the prevalence of anxiety among the general population during the COVID-19 pandemic. *Journal Of Affective Disorders*, 293, 391-398.

Krishnamoorthy, Y., Nagarajan, R., Saya, G. K. & Menon, V. (2020) Prevalence of psychological morbidities among general population, healthcare workers and COVID-19 patients amidst the COVID-19 pandemic: A systematic review and meta-analysis. *Psychiatry Research - Neuroimaging*, 293, 113382.

Kulkarni Medha, S., Kakodkar, P., Nesari Tanuja, M. & Dubewar Arati, P. (2021) Combating the psychological impacts of COVID-19 Pandemic through Yoga: Recommendation from an Overview. *Journal Of Ayurveda And Integrative Medicine*.

*Kunzler Angela, M., Röthke, N., Günthner, L., Stoffers-Winterling, J., Tüscher, O., Coenen, M., Rehfuess, E., Schwarzer, G., Binder, H., Schmucker, C., Meerpohl Joerg, J. & Lieb, K. (2021) Mental burden and its risk and protective factors during the early phase of the SARS-CoV-2 pandemic: systematic review and meta-analyses. *Globalization And Health*, 17(1), 34.

Lee, Y., Lui Leanna, M. W., Chen-Li, D., Liao, Y., Mansur Rodrigo, B., Brietzke, E., Rosenblat Joshua, D., Ho, R., Rodrigues Nelson, B., Lipsitz, O., Nasri, F., Cao, B., Subramaniapillai, M., Gill, H., Lu, C. & McIntyre Roger, S.

(2021) Government response moderates the mental health impact of COVID-19: A systematic review and meta-analysis of depression outcomes across countries. *Journal Of Affective Disorders*, 290, 364-377.

Lin, C.-Y. & Lin, Y.-L. (2020) Anxiety and depression of general population in the early phase of COVID-19 pandemic: A systematic review of cross-sectional studies. *Revista De Psiquiatria Clinica*, 47(6).

Linardon, J., Messer, M., Rodgers Rachel, F. & Fuller-Tyszkiewicz, M. (2021) A systematic scoping review of research on COVID-19 impacts on eating disorders: A critical appraisal of the evidence and recommendations for the field. *International Journal Of Eating Disorders*.

Loades Maria, E., Chatburn, E., Higson-Sweeney, N., Reynolds, S., Shafran, R., Brigden, A., Linney, C., McManus Megan, N., Borwick, C. & Crawley, E. (2020) Rapid Systematic Review: The Impact of Social Isolation and Loneliness on the Mental Health of Children and Adolescents in the Context of COVID-19. *Journal Of The American Academy Of Child And Adolescent Psychiatry*, 59(11).

Luo, F., Gheshlagh Reza, G., Dalvand, S., Saedmoucheshi, S. & Li, Q. (2021) Systematic Review and Meta-Analysis of Fear of COVID-19. *Frontiers In Psychology*, 12.

Luo, M., Guo, L., Yu, M. & Wang, H. (2020) The psychological and mental impact of coronavirus disease 2019 (COVID-19) on medical staff and general public - A systematic review and meta-analysis. *Psychiatry Research - Neuroimaging*, 291, 113190.

Marco, C., Ferrucci, R., Guidetti, M., Canevini Maria, P., Pravettoni, G. & Galli, F. (2020) From Covid-19 to Psychological Distress: A Systematic Review on Quarantine. *Preprints*.

Marconcin, P., Werneck André, O., Peralta, M., Ihle, A., Gouveia, É., Ferrari, G., Sarmento, H. & Marques, A. (2021) The Effects of Physical Activity on Mental Health During the COVID-19 Pandemic: a Systematic Review.

Masaeli, N. & Farhadi, H. (2021) Prevalence of Internet-based addictive behaviors during COVID-19 pandemic: a systematic review. *Journal Of Addictive Diseases*, 1-27.

Matthew, B., Nicole, C., Jessilyn, F., Katherine, H., Hoda Abdel, M. & Swapandeep, M. (2020) Mental Disorder Prevalence Among Populations Impacted by Coronavirus Pandemics: A Multilevel Meta-Analytic Study of COVID-19, MERS & SARS. *medRxiv*.

Mazziotti, R. & Rutigliano, G. (2020) Telemental health for reaching out to patients in a time of pandemic: Provider survey and systematic review with meta-analysis of patient satisfaction (Preprint). *JMIR Mental Health*.

McLean, Courtney, Utpala, Ranjani, Sharp & Gemma (2021) The impacts of COVID-19 on eating disorders and disordered eating: A mixed studies systematic review and implications for healthcare professionals, carers, and self (preprint).

Meherali, S., Punjani, N., Louie-Poon, S., Rahim, K. A., Das, J., Salam, R. & Lassi, Z. (2021) Mental Health of Children and Adolescents Amidst COVID 19 and Past Pandemics: A Rapid Systematic Review. *International Journal of Environmental Research and Public Health*, 18(7), 3432.

Munich, J., Dennett, L., Swainson, J., Greenshaw Andrew, J. & Hayward, J. (2021) Impact of Pandemics/Epidemics on Emergency Department Utilization for Mental Health and Substance Use: A Rapid Review. *Frontiers In Psychiatry*, 12.

Nam, S.-H., Nam, J.-H. & Kwon, C.-Y. (2021) Comparison of the Mental Health Impact of COVID-19 on Vulnerable and Non-Vulnerable Groups: A Systematic Review and Meta-Analysis of Observational Studies. *International Journal Of Environmental Research And Public Health*, 18(20), 10830.

National Collaborating Centre for Methods and, T. (2020) *Rapid Review: How does physical distancing impact mental health?*Hamilton.

Nearchou, F., Flinn, C., Niland, R., Subramaniam Sheena, S. & Hennessy, E. (2020) Exploring the Impact of COVID-19 on Mental Health Outcomes in Children and Adolescents: A Systematic Review. *International Journal Of Environmental Research And Public Health*, 17(22), 8479.

*Necho, M., Tsehay, M., Birkie, M., Biset, G. & Tadesse, E. (2021) Prevalence of anxiety, depression, and psychological distress among the general population during the COVID-19 pandemic: A systematic review and meta-analysis. *International Journal Of Social Psychiatry*, 207640211003121-207640211003121.

*Nochaiwong, S., Ruengorn, C., Thavorn, K., Hutton, B., Awiphan, R., Phosuya, C., Ruanta, Y., Wongpakaran, N. & Wongpakaran, T. (2021) Global prevalence of mental health issues among the general population during the coronavirus disease-2019 pandemic: a systematic review and meta-analysis. *Scientific Reports*, 11(1), 10173-10173.

O'Reilly, A., Tibbs, M., Booth, A., Doyle, E., McKeague, B. & Moore, J. (2020) A rapid review investigating the potential impact of a pandemic on the mental health of young people aged 12-25 years. *Irish Journal of Psychological Medicine*, 1-16.

Panchal & et al. (2021) The Impact of COVID-19 Lockdown on Child and Adolescent Mental Health: Systematic Review. *European Child & Adolescent Psychiatry*.

Panda, P. K., Gupta, J., Chowdhury, S. R. & et al. (2020) Psychological and Behavioral Impact of Lockdown and Quarantine Measures for COVID-19 Pandemic on Children, Adolescents and Caregivers: A Systematic Review and Meta-Analysis. *Journal of Tropical Pediatrics*.

Pappa, S., Chen, J., Barnett, J., Chang, A., Dong Rebecca, K., Xu, W., Yin, A., Chen Bryan, Z., Delios, A., Chen Richard, Z., Miller, S., Wan, X. & Zhang Stephen, X. (2021) A Systematic Review and Meta-Analysis of the Mental Health Symptoms during the Covid-19 Pandemic in Southeast Asia. *Psychiatry And Clinical Neurosciences*.

Paula, M., Edward, A. J. P., Randell, Y. L. C., Madelynne, A. A. & Christopher, J. A. (2020) Minimising Negative Biopsychosocial Impacts as Lockdown Measures End: A Systematic Review. *SSRN*.

*Phiri, P., Ramakrishnan, R., Rathod, S., Elliot, K., Thayanandan, T., Sandle, N., Haque, N., Chau Steven, W., Wong Oscar, W., Chan Sandra, S., Wong Evelyn, K., Raymont, V., Au-Yeung Sheena, K., Kingdon, D. & Delanerolle, G. (2021) An evaluation of the mental health impact of SARS-CoV-2 on patients, general public and healthcare professionals: A systematic review and meta-analysis. *Eclinicalmedicine*, 34, 100806.

Preston AJ. & Rew, L. (2021) Connectedness, Self-Esteem, and Prosocial Behaviors Protect Adolescent Mental Health Following Social Isolation: A Systematic Review. *Issues In Mental Health Nursing*, 1-10.

Qiu, D., Li, Y., Li, L., He, J., Ouyang, F. & Xiao, S. (2021) Prevalence of post-traumatic stress symptoms among people influenced by coronavirus disease 2019 outbreak: A meta-analysis. *European Psychiatry*, 64(1), 1-42.

*Racine, N., McArthur Brae, A., Cooke Jessica, E., Eirich, R., Zhu, J. & Madigan, S. (2021) Global Prevalence of Depressive and Anxiety Symptoms in Children and Adolescents During COVID-19: A Meta-analysis. *JAMA Pediatrics*.

Richter, D., Riedel-Heller, S. & Zuercher, S. (2021) Mental health problems in the general population during and after the first lockdown phase due to the SARS-Cov-2 pandemic: Rapid review of multi-wave studies. *Epidemiology And Psychiatric Sciences*, 1-17.

*Robinson, E., Sutin Angelina, R., Daly, M. & Jones, A. (2021) A systematic review and meta-analysis of longitudinal cohort studies comparing mental health before versus during the COVID-19 pandemic. *Medrxiv*.

Rodríguez-Fernández, P., González-Santos, J., Santamaría-Peláez, M., Soto-Cámara, R., Sánchez-González, E. & González-Bernal Jerónimo, J. (2021) Psychological Effects of Home Confinement and Social Distancing Derived from COVID-19 in the General Population—A Systematic Review. *International Journal Of Environmental Research And Public Health*, 18(12), 6528.

Salari, N., Hosseinian-Far, A., Jalali, R., Vaisi-Raygani, A., Rasoulpoor, S., Mohammadi, M. & Khaledi-Paveh, B. (2020) Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: a systematic review and meta-analysis. *Globalization and Health*, 16(1), 57.

Salehi, M., Mohammadi, M., Salmanian, M., Amanat, M., Rezaei, N., Saghazadeh, A. & Garakani, A. (2021) The prevalence of post-traumatic stress disorder related symptoms in Coronavirus outbreaks: A systematic-review and meta-analysis. *Journal of Affective Disorders*, 282, 527-538.

Santabárbara, J., Lasheras, I., Lipnicki Darren, M., Bueno-Notivol, J., Moreno María, P., López-Antón, R., De la Cámara, C., Lobo, A. & Gracia-García, P. (2020) Prevalence of anxiety in the COVID-19 pandemic: An updated meta-analysis of community-based studies. *Progress In Neuro Psychopharmacology & Biological Psychiatry*, 110207.

Santo Tiffany, D., Sun, Y., Wu, Y., He, C., Wang, Y., Jiang, X., Li, K., Bonardi, O., Krishnan, A., Boruff Jill, T., Rice Danielle, B., Markham, S., Levis, B., Azar, M., Neupane, D., Tasleem, A., Yao, A., Thombs-Vite, I., Agic, B., Fahim, C., Martin Michael, S., Sockalingam, S., Turecki, G., Benedetti, A. & Thombs Brett, B. (2021) Comparison of Mental Health Symptom Changes from pre-COVID-19 to COVID-19 by Sex or Gender: A Systematic Review and Meta-analysis. *Medrxiv*.

Soklaridis, S., Lin, E., Lalani, Y., Rodak, T. & Sockalingam, S. (2020) Mental health interventions and supports during COVID- 19 and other medical pandemics: A rapid systematic review of the evidence. *General Hospital Psychiatry*, 66, 133-146.

Solehati, T., Kosasih, C. E., Hermayanti, Y. & Mediani, H. S. (2021) The psychological and sleep-related impact of coronavirus disease 2019 (covid-19): A systematic review. *Kesmas*, 16, 65-74.

Strudwick, G., Sockalingam, S., Kassam, I., Sequeira, L., Bonato, S., Youssef, A., Mehta, R., Green, N., Agic, B., Soklaridis, S., Impey, D., Wiljer, D. & Crawford, A. (2020) Digital Interventions to Support Population Mental Health in Canada during the COVID-19 Pandemic: A Rapid Review. *JMIR Mental Health*.

Sulaiman, F., Hamid, E., Muhajarine, N., Dalidowicz, M. & Miller, L. (2021) *COVID-19 Rapid Evidence Review: How has COVID-19 and the public health response to COVID-19 impacted mental health outcomes on children 5 to 18 years (school-age)?*Hamilton, ON.

Sun, Y., Wu, Y., Bonardi, O., Krishnan, A., He, C., Boruff Jill, T., Rice Danielle, B., Wang, Y., Jiang, X., Li, K., Markham, S., Levis, B., Azar, M., Thombs-Vite, I., Neupane, D., Santo Tiffany, D., Tasleem, A., Yao, A., Agic, B.,

Fahim, C., Martin Michael, S., Sockalingam, S., Turecki, G., Benedetti, A. & Thombs Brett, D. (2021) Comparison of Mental Health Symptoms prior to and during COVID-19: Evidence from a Living Systematic Review and Meta-analysis. *Medrxiv*.

Susanto, J. & Pandin Moses Glorino, R. (2021) Influence Factors Psychological and Stigma During the COVID-19 Pandemic: Literature Review.

Sx, Z., Batra, K., Liu, T., Rk, D., Xu, W., Yin, A., Delios, A., Bz, C., Rz, C., Miller, S., Wan, X. & Chen, J. (2021) Meta-analytical evidence on mental disorder symptoms during the COVID-19 pandemic in Latin America. *Medrxiv*.

Sxo, Z., So, M., Xu, W., Yin, A., Chen, B., Delios, A., Rk, D., Rz, C., McIntyre, R., Wan, X., Wang, S. & Chen, J. (2021) Meta-Analytic Evidence of Depression and Anxiety in Eastern Europe during the COVID-19 Pandemic. *Medrxiv*.

Thakur, B. & Pathak, M. (2022) Burden of Predominant Psychological Reactions Among the Healthcare Workers and General Population During COVID-19 Pandemic Phase: A Systematic Review and Meta-Analysis. *Indian Journal Of Community Medicine*, 46(4), 600-605.

Thombs, B. D., Bonardi, O., Rice, D. B., Boruff, J. T., Azar, M. & Chen, H. (2020) *Mental Health during the COVID-19 Pandemic: A Living Systematic Review of Mental Health Burden, Factors Associated with Mental Health Outcomes, and Intervention Effectiveness in the General Population and Vulnerable Populations*.

Urhi, A., Akinbode, O., Olatunde, H., Olateju Iyanu, V., Fasina, F., Ogwu, D., Uzzi, C., Yoade, B., Anugwom Gibson, O., Olowere, M., Owolabi Matthew, O. & Oladunjoye Adeolu, F. (2021) The Impact of COVID-19 on Eating Disorder Risks and Symptoms in the General Population: A Systematic Review. *Journal Of Advances In Medicine And Medical Research*, 229-241.

Usher, K., Jackson, D., Durkin, J., Gyamfi, N. & Bhullar, N. (2020) Pandemic-related behaviours and psychological outcomes: A rapid literature review to explain COVID-19 behaviours. *International Journal of Mental Health Nursing*, 29(6), 1018-1034.

Viner, R., Russell, S., Saulle, R., Croker, H., Stansfield, C., Packer, J., Nicholls, D., Goddings, A. L., Bonell, C., Hudson, L., Hope, S., Ward, J., Schwalbe, N., Morgan, A. & Minozzi, S. (2021) Associations of School Closures with and without Social Lockdown on Physical and Mental Health of Children and Young People during the First COVID-19 Wave: A Systematic Review. *JAMA Pediatrics*.

Vos, J. (2020) Prevalence and predictors of the early psychological impact of the COVID-19 pandemic compared with SARS and MERS: A systematic literature review and meta-analysis.

Wang, F. & Boros, S. (2021) Mental and physical health in general population during COVID-19: Systematic review and narrative synthesis. *Baltic Journal Of Health And Physical Activity*, 13(1), 91-99.

Wang, Y., Kala Monica, P. & Jafar Tazeen, H. (2020) Factors associated with psychological distress during the coronavirus disease 2019 (COVID-19) pandemic on the predominantly general population: A systematic review and meta-analysis. *Plos One*, 15(12).

Wolf, S., Seiffer, B., Zeibig, J.-M., Welkerling, J., Brokmeier, L., Atrott, B., Ehring, T. & Schuch Felipe, B. (2021) Is Physical Activity Associated with Less Depression and Anxiety During the COVID-19 Pandemic? A Rapid Systematic Review. *Sports Medicine*, 1-13.

Wolf, S., Zeibig, J., Seiffer, B., Welkerling, J., Brokmeier, L., Atrott, B., Ehring, T. & Schuch, F. (2020) Can physical activity protect against depression and anxiety during the COVID-19 pandemic? A rapid systematic review. *ResearchSquare*.

Wu, T., Jia, X., Shi, H., Niu, J., Yin, X., Xie, J. & Wang, X. (2021) Prevalence of mental health problems during the COVID-19 pandemic: A systematic review and meta-analysis. *Journal Of Affective Disorders*.

Xiong, J., Lipsitz, O., Nasri, F., Lui, L. M. W., Gill, H., Phan, L., Chen-Li, D., Iacobucci, M., Ho, R., Majeed, A. & McIntyre, R. S. (2020) Impact of COVID-19 pandemic on mental health in the general population: A systematic review. *Journal of Affective Disorders*, 277, 55-64.

Zhang, L., Pan, R., Cai, Y. & Pan, J. (2021) The Prevalence of Post-Traumatic Stress Disorder in the General Population during the COVID-19 Pandemic: A Systematic Review and Single-Arm Meta-Analysis. *Psychiatry Investigation*.

Zhang Stephen, X., Chen Richard, Z., Xu, W., Yin, A., Dong Rebecca, K., Chen Bryan, Z., Delios Andrew, Y., Miller, S., McIntyre Roger, S., Ye, W. & Wan, X. (2022) A Systematic Review and Meta-Analysis of Symptoms of Anxiety, Depression, and Insomnia in Spain in the COVID-19 Crisis. *International Journal Of Environmental Research And Public Health*, 19(2), 1018-1018.

Zhao, Y.-J., Jin, Y., Rao, W.-W., Li, W., Zhao, N., Cheung, T., Ng Chee, H., Wang, Y.-Y., Zhang Qing, E. & Xiang, Y.-T. (2021) The prevalence of psychiatric comorbidities during the SARS and COVID-19 epidemics: a systematic review and meta-analysis of observational studies. *Journal Of Affective Disorders*.

Zortea Tiago, C., Brenna Connor, T. A., Joyce, M., McClelland, H., Tippett, M., Tran Maxwell, M., Arensman, E., Corcoran, P., Hatcher, S., Heise Marnin, J., Links, P., O'Connor Rory, C., Edgar Nicole, E., Cha, Y., Guaiana, G., Williamson, E., Sinyor, M. & Platt, S. (2020) The impact of infectious disease-related public health emergencies on suicide, suicidal behavior, and suicidal thoughts: A systematic review. *Crisis: The Journal of Crisis Intervention and Suicide Prevention*, 1-14.

Özgüç, S., Serin Emine, K. & Tanriverdi, D. (2021) Death Anxiety Associated With Coronavirus (COVID-19) Disease: A Systematic Review and Meta-Analysis. *Omega-International Journal Of Management Science*, 302228211050503.

Şimşir, Z., Koç, H., Seki, T. & Griffiths Mark, D. (2021) The relationship between fear of COVID-19 and mental health problems: A meta-analysis. *Death Studies*, 1-9.

## Included systematic reviews of effectiveness

Bartlett, L., Martin, A., Neil, A. L., Memish, K., Otahal, P., Kilpatrick, M., & Sanderson, K. (2019). A systematic review and meta-analysis of workplace mindfulness training randomized controlled trials. Journal of occupational health psychology, 24(1), 108-126.

Bellon, J. A., Conejo-Ceron, S., Cortes-Abela, C., Pena-Andreu, J. M., Garcia-Rodriguez, A., & Moreno-Peral, P. (2019). Effectiveness of psychological and educational interventions for the prevention of depression in the workplace: A systematic review and meta-analysis. Scandinavian Journal of Work, Environment & Health, 45(4), 324-332.

Buttazzoni, A., Brar, K., & Minaker, L. (2021). Smartphone-Based Interventions and Internalizing Disorders in Youth: Systematic Review and Meta-analysis. Journal of medical Internet research, 23(1), e16490.

Caldwell Deborah, M., Davies Sarah, R., Thorn Joanna, C., Palmer Jennifer, C., Caro, P., Hetrick Sarah, E., Welton Nicky, J. (2021). School-based interventions to prevent anxiety, depression and conduct disorder in children and young people: a systematic review and network meta-analysis.

Cuijpers, P., Karyotaki, E., Eckshtain, D., Ng, M. Y., Corteselli, K. A., Noma, H., . . . Weisz, J. R. (2020). Psychotherapy for depression across different age groups: a systematic review and meta-analysis. JAMA psychiatry, 77(7), pp.694-702., 77(7), 694-702.

Dolan, N., Simmonds-Buckley, M., Kellett, S., Siddell, E., & Delgadillo, J. (2021). Effectiveness of stress control large group psychoeducation for anxiety and depression: Systematic review and meta-analysis. The British journal of clinical psychology, 60(3), 375-399.

Eilert, N., Wogan, R., Leen, A., & Richards, D. (2022). Internet-Delivered Interventions for Depression and Anxiety Symptoms in Children and Young People: Systematic Review and Meta-analysis. JMIR pediatrics and parenting, 5(2), e33551.

Gee, B., Reynolds, S., Carroll, B., Orchard, F., Clarke, T., Martin, D., . . . Pass, L. (2020). Practitioner Review: Effectiveness of indicated school-based interventions for adolescent depression and anxiety - a meta-analytic review. Journal of child psychology and psychiatry, and allied disciplines, 61(7), 739-756.

Grist, R., Croker, A., Denne, M., & Stallard, P. (2018). Technology Delivered Interventions for Depression and Anxiety in Children and Adolescents: A Systematic Review and Meta-analysis. Clinical child and family psychology review, 22(2), 147-171.

James, A. C., Reardon, T., Soler, A., James, G., & Creswell, C. (2020). Cognitive behavioural therapy for anxiety disorders in children and adolescents. The Cochrane database of systematic reviews, 11(11), CD013162.

Leech, T., Dorstyn, D., Taylor, A., & Li, W. (2021). Mental health apps for adolescents and young adults: A systematic review of randomised controlled trials. Children and Youth Services Review, 127.

Linardon, J., Cuijpers, P., Carlbring, P., Messer, M., & Fuller-Tyszkiewicz, M. (2019). The efficacy of app-supported smartphone interventions for mental health problems: A meta-analysis of randomized controlled trials. World Psychiatry(3), 325-336.

Mavranezouli, I., Megnin-Viggars, O., Daly, C., Dias, S., Stockton, S., Meiser-Stedman, R., . . . Pilling, S. (2020). Research Review: Psychological and psychosocial treatments for children and young people with post-traumatic stress disorder: a network meta-analysis. Journal of child psychology and psychiatry, 61(1), 18-29.

Nigatu, Y. T., Huang, J., Rao, S., Gillis, K., Merali, Z., & Wang, J. (2019). Indicated Prevention Interventions in the Workplace for Depressive Symptoms: A Systematic Review and Meta-analysis. American journal of preventive medicine, 56(1), e23-e33.

Pauley, D., Cuijpers, P., Papola, D., Miguel, C., & Karyotaki, E. (2021). Two decades of digital interventions for anxiety disorders: a systematic review and meta-analysis of treatment effectiveness. 1-14.

Simon, N., Robertson, L., Lewis, C., Roberts, N. P., Bethell, A., Dawson, S., & Bisson, J. I. (2021). Internet-based cognitive and behavioural therapies for post-traumatic stress disorder (PTSD) in adults. Cochrane Database of Systematic Reviews.

Wan Mohd Yunus, W. M. A., Musiat, P., & Brown, J. S. L. (2018). Systematic review of universal and targeted workplace interventions for depression. Occupational and environmental medicine, 75(1), 66-75.

## Include primary studies on scale up

Adiukwu, F., de Filippis, R., Orsolini, L., Gashi, B., Drita, Shoib, S., Ransing, R., Slaih, M., Jaguga, F., Handuleh Jibril, I. M., Ojeahere Margaret, I., Ullah, I., Karaliuniene, R., Nagendrappa, S., Vahdani, B., Ashrafi, A., Ori, D., Noel, C., Abbass, Z., Jatchavala, C., Pinto da Costa, M., Essam, L., Vadivel, R. and Shalbafan, M. (2022) 'Scaling Up Global Mental Health Services During the COVID-19 Pandemic and Beyond', *Psychiatric services (Washington, D.C.),* 73(2), pp. 231-234.

Agbakoba, R., McGee-Lennon, M., Bouamrane, M.-M., Watson, N. and Mair, F. (2015) 'Implementing a National Scottish Digital Health & Wellbeing Service at Scale: A Qualitative Study of Stakeholders' Views', *Studies in health technology and informatics,* 216, pp. 487-91.

Akhtar, A., Giardinelli, L., Bawaneh, A., Awwad, M., Al-Hayek, H., Whitney, C., Jordans Mark, J. D., Sijbrandij, M., Cuijpers, P., Dawson, K. and Bryant, R. (2021a) 'Feasibility trial of a scalable transdiagnostic group psychological intervention for Syrians residing in a refugee camp', *European journal of psychotraumatology,* 12(1), pp. 1932295.

Akhtar, A., Koyiet, P., Rahman, A., Schafer, A., Hamdani Syed, U., Cuijpers, P., Sijbrandij, M. and Bryant Richard, A. (2022) 'Residual posttraumatic stress disorder symptoms after provision of brief behavioral intervention in low- and middle-income countries: An individual-patient data meta-analysis', *Depression and anxiety,* 39(1), pp. 71-82.

Akhtar, A., Malik, A., Ghatasheh, M., Aqel Ibrahim, S., Habashneh, R., Dawson Katie, S., Watts, S., Jordans Mark, J. D., Brown, F., Sijbrandij, M., Cuijpers, P. and Bryant, R. (2021b) 'Feasibility trial of a brief scalable psychological intervention for Syrian refugee adolescents in Jordan', *European journal of psychotraumatology,* 12(1), pp. 1901408.

Alonge, O., Chiumento, A., Hamoda Hesham, M., Gaber, E., Huma Zill, E., Abbasinejad, M., Hosny, W., Shakiba, A., Minhas, A., Saeed, K., Wissow, L. and Rahman, A. (2020) 'Identifying pathways for large-scale implementation of a school-based mental health programme in the Eastern Mediterranean Region: a theory-driven approach', *Health policy and planning,* 35(Supplement_2), pp. ii112-ii123.

Alvarez-Jimenez, M., Rice, S., D'Alfonso, S., Leicester, S., Bendall, S., Pryor, I., Russon, P., McEnery, C., Santesteban-Echarri, O., Da Costa, G., Gilbertson, T., Valentine, L., Solves, L., Ratheesh, A., McGorry Patrick, D. and Gleeson, J. (2020) 'A Novel Multimodal Digital Service (Moderated Online Social Therapy+) for Help-Seeking Young People Experiencing Mental Ill-Health: Pilot Evaluation Within a National Youth E-Mental Health Service', *Journal of medical Internet research,* 22(8), pp. e17155.

Amaya-Jackson, L., Hagele, D., Sideris, J., Potter, D., Briggs Ernestine, C., Keen, L., Murphy Robert, A., Dorsey, S., Patchett, V., Ake George, S. and Socolar, R. (2018) 'Pilot to policy: statewide dissemination and implementation of evidence-based treatment for traumatized youth', *BMC health services research,* 18(1), pp. 589.

Araya, R., Alvarado, R., Sepulveda, R. and Rojas, G. (2012) 'Lessons from scaling up a depression treatment program in primary care in Chile', *Revista panamericana de salud publica = Pan American journal of public health,* 32(3), pp. 234-40.

Bastiampillai, T., Jones Gabrielle, M., Furber, G., Moreau, M., Healey, D., Watson, J. and Battersby, M. (2014) 'The IAPT@Flinders Service: adapting the Improving Access to Psychological Therapies model to the

emergency department setting in Australia', *Australasian psychiatry : bulletin of Royal Australian and New Zealand College of Psychiatrists,* 22(3), pp. 277-280.

Baumeister, H., Paganini, S., Sander Lasse, B., Lin, J., Schlicker, S., Terhorst, Y., Moshagen, M., Bengel, J., Lehr, D. and Ebert David, D. (2021) 'Effectiveness of a Guided Internet- and Mobile-Based Intervention for Patients with Chronic Back Pain and Depression (WARD-BP): A Multicenter, Pragmatic Randomized Controlled Trial', *Psychotherapy and psychosomatics,* 90(4), pp. 255-268.

Bearman Sarah, K., Bailin, A., Terry, R. and Weisz John, R. (2020) 'After the Study Ends: A Qualitative Study of Factors Influencing Intervention Sustainability', *Professional psychology, research and practice,* 51(2), pp. 134-144.

Beck, A., Boggs Jennifer, M., Alem, A., Coleman Karen, J., Rossom Rebecca, C., Neely, C., Williams Mark, D., Ferguson, R. and Solberg Leif, I. (2018) 'Large-Scale Implementation of Collaborative Care Management for Depression and Diabetes and/or Cardiovascular Disease', *Journal of the American Board of Family Medicine : JABFM,* 31(5), pp. 702-711.

Belkin, G. S., Unutzer, J., Kessler, R. C., Verdeli, H., Raviola, G. J., Sachs, K., Oswald, C. and Eustache, E. (2011) 'Scaling Up for the "Bottom Billion": "5x5" Implementation of Community Mental Health Care in Low-Income Regions', *Psychiatric Services,* 62(12), pp. 1494-1502.

Bendtsen, M., Mussener, U., Linderoth, C. and Thomas, K. (2020) 'A Mobile Health Intervention for Mental Health Promotion Among University Students: Randomized Controlled Trial', *JMIR mHealth and uHealth,* 8(3), pp. e17208.

Bennett, K. (2022) 'An evaluation of a public online intervention for depression', *Dissertation Abstracts International,* 83(5-B), pp. No-Specified.

Bolier, L., Majo, C., Smit, F., Westerhof, G. J., Haverman, M., Walburg, J. A., Riper, H. and Bohlmeijer, E. (2014) 'Cost-effectiveness of online positive psychology: Randomized controlled trial', *Journal of Positive Psychology,* 9(5), pp. 460-471.

Booth Richard, G., Allen Britney, N., Bray, J., Krista, M., Li, L. and Shariff Salimah, Z. (2018) 'Youth Mental Health Services Utilization Rates After a Large-Scale Social Media Campaign: Population-Based Interrupted Time-Series Analysis', *JMIR mental health,* 5(2), pp. e27.

Bottche, M., Wagner, B., Vohringer, M., Heinrich, M., Stein, J., Selmo, P., Stammel, N. and Knaevelsrud, C. (2021) 'Is only one cognitive technique also effective? Results from a randomized controlled trial of two different versions of an internet-based cognitive behavioural intervention for post-traumatic stress disorder in Arabic-speaking countries', *European journal of psychotraumatology,* 12(1), pp. 1943870.

Brabyn, S., Araya, R., Barkham, M., Bower, P., Cooper, C., Duarte, A., Kessler, D., Knowles, S., Lovell, K., Littlewood, E., Mattock, R., Palmer, S., Pervin, J., Richards, D., Tallon, D., White, D., Walker, S., Worthy, G. and Gilbody, S. (2016) 'The second Randomised Evaluation of the Effectiveness, cost-effectiveness and Acceptability of Computerised Therapy (REEACT-2) trial: does the provision of telephone support enhance the effectiveness of computer-delivered cognitive behaviour therapy? A randomised controlled trial', *Health technology assessment (Winchester, England),* 20(89), pp. 1-64.

Bragesjo, M., Arnberg, F. K., Sarnholm, J., Lauri, K. O., Andersson, E. and Aspvall, K. (2021) 'Condensed Internet-delivered prolonged exposure provided soon after trauma: a randomised trial', *Psychological Medicine*, pp. 10.

Bramberg Elisabeth, B., Klinga, C., Jensen, I., Busch, H., Bergstrom, G., Brommels, M. and Hansson, J. (2015) 'Implementation of evidence-based rehabilitation for non-specific back pain and common mental health problems: a process evaluation of a nationwide initiative', *BMC health services research,* 15, pp. 79.

Brog, N. A., Hegy, J. K., Berger, T. and Znoj, H. (2022) 'Effects of an internet-based self-help intervention for psychological distress due to COVID-19: results of a randomized controlled trial', *Internet interventions,* 27.

Brown, F., Fuhr, D., Acarturk, C. and Akhtar, A. (2019) 'Evaluating the Implementation of the World Health Organization's Scalable Psychological Interventions for Refugees in the Middle East', *European Journal of Psychotraumatology,* 10, pp. 1.

Brown June, S. L., Elliott Sandra, A., Boardman, J., Ferns, J. and Morrison, J. (2004) 'Meeting the unmet need for depression services with psycho-educational self-confidence workshops: Preliminary report', *Journal of Mental Science, The Asylum Journal, The Asylum Journal of Mental Science,* 185(6), pp. 511-515.

Brown June, S. L., Elliott Sandra, A. and Butler, C. (2006) 'Can large-scale self-referral psycho-educational stress workshops help improve the psychological health of the population?', *Behavioural Psychotherapy,* 34(2), pp. 165-177.

Brugha, T. S., Smith, J., Austin, J., Bankart, J., Patterson, M., Lovett, C., Morgan, Z., Morrell, C. J. and Slade, P. (2016) 'Can community midwives prevent antenatal depression? An external pilot study to test the feasibility of a cluster randomized controlled universal prevention trial', *Psychological medicine,* 46(2), pp. 345-56.

Burckhardt, R., Manicavasagar, V., Batterham Philip, J., Hadzi-Pavlovic, D. and Shand, F. (2017) 'Acceptance and commitment therapy universal prevention program for adolescents: a feasibility study', *Child and adolescent psychiatry and mental health,* 11, pp. 27.

Calvete, E., Fernandez-Gonzalez, L., Orue, I., Echezarraga, A., Royuela-Colomer, E., Cortazar, N., Muga, J., Longa, M. and Yeager David, S. (2019) 'The Effect of an Intervention Teaching Adolescents that People can Change on Depressive Symptoms, Cognitive Schemas, and Hypothalamic-Pituitary-Adrenal Axis Hormones', *Journal of abnormal child psychology,* 47(9), pp. 1533-1546.

Chibanda, D., Verhey, R., Munetsi, E., Cowan, F. M. and Lund, C. (2016) 'Using a theory driven approach to develop and evaluate a complex mental health intervention: the friendship bench project in Zimbabwe', *International Journal of Mental Health Systems,* 10, pp. 9.

Chisholm, D. (2005) 'Choosing cost-effective interventions in psychiatry: results from the CHOICE programme of the World Health Organization', *World psychiatry : official journal of the World Psychiatric Association (WPA),* 4(1), pp. 37-44.

Chisholm, D., Heslin, M., Docrat, S., Nanda, S., Shidhaye, R., Upadhaya, N., Jordans, M., Abdulmalik, J., Olayiwola, S., Gureje, O., Kizza, D., Mugisha, J., Kigozi, F., Hanlon, C., Adugna, M., Sanders, R., Pretorius, C., Thornicroft, G. and Lund, C. (2017) 'Scaling-up services for psychosis, depression and epilepsy in sub-Saharan Africa and South Asia: development and application of a mental health systems planning tool (OneHealth)', *Epidemiology and psychiatric sciences,* 26(3), pp. 234-244.

Chisholm, D., Lund, C. and Saxena, S. (2007) 'Cost of scaling up mental healthcare in low- and middle-income countries', *The British journal of psychiatry : the journal of mental science,* 191, pp. 528-35.

Chisholm, D., Sweeny, K., Sheehan, P., Rasmussen, B., Smit, F., Cuijpers, P. and Saxena, S. (2016) 'Scaling-up treatment of depression and anxiety: a global return on investment analysis', *Comment in: BMJ. 2016;353:i2134 PMID: 27075564 [https://www.ncbi.nlm.nih.gov/pubmed/27075564] Comment in: Lancet*

*Psychiatry. 2016 Jul;3(7):603 PMID: 27371984 [https://www.ncbi.nlm.nih.gov/pubmed/27371984] Comment in: Lancet Psychiatry. 2016 Aug;3(8):707 PMID: 27475764 [https://www.ncbi.nlm.nih.gov/pubmed/27475764],* 3(5), pp. 415-24.

Chu Brian, C., Carpenter Aubrey, L., Wyszynski Christopher, M., Conklin Phoebe, H. and Comer Jonathan, S. (2017) 'Scalable Options for Extended Skill Building Following Didactic Training in Cognitive-Behavioral Therapy for Anxious Youth: A Pilot Randomized Trial', *Journal of clinical child and adolescent psychology : the official journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53,* 46(3), pp. 401-410.

Clark David, M. (2012) 'The English Improving Access to Psychological Therapies (IAPT) Program: History and progress', *Dissemination and implementation of evidence-based psychological interventions.*, pp. 61-77.

Clark David, M., Layard, R., Smithies, R., Richards David, A., Suckling, R. and Wright, B. (2009) 'Improving access to psychological therapy: Initial evaluation of two UK demonstration sites', *Behaviour research and therapy,* 47(11), pp. 910-20.

Daley, K., Hungerbuehler, I., Cavanagh, K., Claro Heloisa, G., Swinton Paul, A. and Kapps, M. (2020) 'Preliminary Evaluation of the Engagement and Effectiveness of a Mental Health Chatbot', *Frontiers in digital health,* 2, pp. 576361.

Dosovitsky, G., Pineda Blanca, S., Jacobson Nicholas, C., Chang, C., Escoredo, M. and Bunge Eduardo, L. (2020) 'Artificial Intelligence Chatbot for Depression: Descriptive Study of Usage', *JMIR formative research,* 4(11), pp. e17065.

Economides, M., Bolton, H., Male, R. and Cavanagh, K. (2022) 'Feasibility and Preliminary Efficacy of Web-Based and Mobile Interventions for Common Mental Health Problems in Working Adults: Multi-Arm Randomized Pilot Trial', *JMIR formative research,* 6(3), pp. e34032.

Fekadu, A. H. C., Girmay, M., Atalay, A., Medhin, S., Giorgis, T. W., Teshome, S., Teferra, S., Teketel, T., Breuer, E., Vikram, P., Tomlinson, M., Thornicroft, G., Prince, M. and Lund, C. (2016) 'Development of a scalable mental healthcare plan for a rural district in Ethiopia', *Special Issue: Mental health plans in five low- and middle-income countries: PRogramme for Improving Mental health carE (PRIME).* 208(s56), pp. s4-s12.

Fuhr Daniela, C., Acarturk, C., Sijbrandij, M., Brown Felicity, L., Jordans Mark, J. D., Woodward, A., McGrath, M., Sondorp, E., Ventevogel, P., Ikkursun, Z., El Chammay, R., Cuijpers, P. and Roberts, B. (2020) 'Planning the scale up of brief psychological interventions using theory of change', *BMC health services research,* 20(1), pp. 801.

Fuhr, D. C., Acarturk, C., Uygun, E., McGrath, M., Ilkkursun, Z., Kaykha, S., Sondorp, E., Sijbrandij, M., Ventevogel, P., Cuijpers, P., Roberts, B. and Consortium, S. (2020) 'Pathways towards scaling up Problem Management Plus in Turkey: a theory of change workshop', *Conflict and Health,* 14(1), pp. 9.

Gibson, K., Little, J., Cowlishaw, S., Ipitoa, T., Teawa, Forbes, D. and O'Donnell, M. (2021) 'Piloting a scalable, post-trauma psychosocial intervention in Tuvalu: the Skills for Life Adjustment and Resilience (SOLAR) program', *European journal of psychotraumatology,* 12(1), pp. 1948253.

Hosseini Jebeli Seyede, S., Rezapour, A., Hajebi, A., Moradi-Lakeh, M. and Damari, B. (2021) 'Scaling-up a new socio-mental health service model in Iran to reduce burden of neuropsychiatric disorders: an economic evaluation study', *International journal of mental health systems,* 15(1), pp. 47.

Hungerbuehler, I., Leite, R. F. M., van de Bilt, M. T. and Gattaz, W. F. (2015) 'A randomized clinical trial of home-based telepsychiatric outpatient care via videoconferencing: design, methodology, and implementation', *Revista de psiquiatria clinica,* 42(3), pp. 76-78.

Irurozqui, M. O., Rodriguez-Cuevas, F. and Lopez-Salinas, A. (2021) 'Collaborative and scalable training model for rural comunities of La Sierra Madre in Chiapas, Mexico: An opportunity for global mental health in low-middel income areas', *European Psychiatry,* 64, pp. S731-S731.

Jordans Mark, J. D. and Kohrt Brandon, A. (2020) 'Scaling up mental health care and psychosocial support in low-resource settings: a roadmap to impact', *Epidemiology and psychiatric sciences,* 29, pp. e189.

Kahlon Maninder, K., Aksan, N., Aubrey, R., Clark, N., Cowley-Morillo, M., Jacobs Elizabeth, A., Mundhenk, R., Sebastian Katherine, R. and Tomlinson, S. (2021) 'Effect of Layperson-Delivered, Empathy-Focused Program of Telephone Calls on Loneliness, Depression, and Anxiety Among Adults During the COVID-19 Pandemic: A Randomized Clinical Trial', *JAMA psychiatry,* 78(6), pp. 616-622.

Kanika, M., Michelson, D., Doyle, A. M., Weiss, H. A., Greco, G., Rooplata, S., James, E. J., Sonal, M., Paulomi, S., King, M., Cuijpers, P., Chorpita, B., Fairburn, C. G. and Vikram, P. (2021) 'Effectiveness and costs associated with a lay counselor-delivered, brief problem-solving mental health intervention for adolescents in urban, low-income schools in India: 12-month outcomes of a randomized controlled trial', *PLoS Medicine,* 18(9).

Karki Freja, U. (2015) 'Norway's 2011 Terror Attacks: Alleviating National Trauma With a Large-Scale Proactive Intervention Model', *Psychiatric services (Washington, D.C.),* 66(9), pp. 910-2.

Lampa, E., Sarkadi, A. and Warner, G. (2021) 'Implementation and Maintenance of a Community-Based Intervention for Refugee Youth Reporting Symptoms of Post-Traumatic Stress: Lessons from Successful Sites', *International Journal of Environmental Research and Public Health,* 18(1), pp. 13.

Livheim, F. (2022) 'ACT treatment for youth: A contextual behavioral approach', *Dissertation Abstracts International,* 83(5-B), pp. No-Specified.

Makhashvili, N., Tsiskarishvili, L. and Drozdek, B. (2010) 'Door to the unknown: On large-scale public mental health interventions in postconflict zones-Experiences from Georgia', *Traumatology: An International Journal,* 16(4), pp. 63-72.

March, S., Spence Susan, H., Donovan Caroline, L. and Kenardy Justin, A. (2018) 'Large-Scale Dissemination of Internet-Based Cognitive Behavioral Therapy for Youth Anxiety: Feasibility and Acceptability Study', *Journal of medical Internet research,* 20(7), pp. e234.

McCabe, O. L., Semon NL., Thompson CB., Lating JM., Everly GS., Perry CJ., Moore SS., Mosley AM. and Links Jonathan, M. (2014) 'Building a national model of public mental health preparedness and community resilience: validation of a dual-intervention, systems-based approach', *Disaster medicine and public health preparedness,* 8(6), pp. 511-26.

McGinty Emma, E., Murphy Karly, A., Dalcin Arlene, T., Stuart Elizabeth, A., Wang, N.-Y., Dickerson, F., Gudzune, K., Jerome, G., Thompson, D., Cullen Bernadette, A., Gennusa, J., Kilbourne Amy, M. and Daumit Gail, L. (2021) 'A Model for Advancing Scale-Up of Complex Interventions for Vulnerable Populations: the ALACRITY Center for Health and Longevity in Mental Illness', *Journal of general internal medicine,* 36(2), pp. 500-505.

Muke Shital, S., Tugnawat, D., Joshi, U., Anand, A., Khan, A., Shrivastava, R., Singh, A., Restivo Juliana, L., Bhan, A., Patel, V. and Naslund John, A. (2020) 'Digital Training for Non-Specialist Health Workers to Deliver a Brief

Psychological Treatment for Depression in Primary Care in India: Findings from a Randomized Pilot Study', *International journal of environmental research and public health,* 17(17).

Nakamura Brad, J., Chorpita Bruce, F., Hirsch, M., Daleiden, E., Slavin, L., Amundson, M. J., Rocco, S., Mueller, C., Osiecki, S., Southam-Gerow Michael, A., Stern, K. and Vorsino Wanda, M. (2011) 'Large-scale implementation of evidence-based treatments for children 10 years later: Hawaii's evidence-based services initiative in children's mental health', *Clinical Psychology: Science and Practice,* 18(1), pp. 24-35.

Naslund John, A., Shidhaye, R. and Patel, V. (2019) 'Digital Technology for Building Capacity of Nonspecialist Health Workers for Task Sharing and Scaling Up Mental Health Care Globally', *Harvard review of psychiatry,* 27(3), pp. 181-192.

O'Donnell Meaghan, L., Lau, W., Fredrickson, J., Gibson, K., Bryant Richard, A., Bisson, J., Burke, S., Busuttil, W., Coghlan, A., Creamer, M., Gray, D., Greenberg, N., McDermott, B., McFarlane Alexander, C., Monson Candice, M., Phelps, A., Ruzek Josef, I., Schnurr Paula, P., Ugsang, J., Watson, P., Whitton, S., Williams, R., Cowlishaw, S. and Forbes, D. (2020) 'An Open Label Pilot Study of a Brief Psychosocial Intervention for Disaster and Trauma Survivors', *Frontiers in psychiatry,* 11, pp. 483.

Owusu Jocelynn, T., Wang, P., Wickham Robert, E., Varra Alethea, A., Chen, C. and Lungu, A. (2022) 'Real-World Evaluation of a Large-Scale Blended Care-Cognitive Behavioral Therapy Program for Symptoms of Anxiety and Depression', *Telemedicine journal and e-health : the official journal of the American Telemedicine Association*.

Piera-Jimenez, J., Etzelmueller, A., Kolovos, S., Folkvord, F. and Lupianez-Villanueva, F. (2021) 'Guided Internet-Based Cognitive Behavioral Therapy for Depression: Implementation Cost-Effectiveness Study', *Journal of medical Internet research,* 23(5), pp. e27410.

Restivo Juliana, L., Mitchell, L., Joshi, U., Anand, A., Gugiu, P. C., Singla Daisy, R., Hollon Steven, D., Patel, V., Naslund John, A. and Cooper, Z. (2020) 'Assessing health worker competence to deliver a brief psychological treatment for depression: development and validation of a scalable measure', *Journal of behavioral and cognitive therapy,* 30(4), pp. 253-266.

Roberge, P., Provencher Martin, D., Gaboury, I., Gosselin, P., Vasiliadis, H.-M., Benoit, A., Carrier, N., Antony Martin, M., Chaillet, N., Houle, J., Hudon, C. and Norton Peter, J. (2020) 'Group transdiagnostic cognitive-behavior therapy for anxiety disorders: a pragmatic randomized clinical trial', *Psychological medicine*, pp. 1-11.

Ruggiero, K. J., Bunnell, B. E., Andrews, A. R., Davidson, T. M., Hanson, R. F., Danielson, C. K., Saunders, B. E., Soltis, K., Yarian, C., Chu, B. and Adams, Z. W. (2015) 'Development and Pilot Evaluation of a Tablet-Based Application to Improve Quality of Care in Child Mental Health Treatment', *Jmir Research Protocols,* 4(4), pp. 18.

Ryan, G. K., Nwefoh, E., Aguocha, C., Ode, P. O., Okpoju, S. O., Ocheche, P., Woyengikuro, A., Abdulmalik, J. and Eaton, J. (2020) 'Partnership for the implementation of mental health policy in Nigeria: a case study of the Comprehensive Community Mental Health Programme in Benue State', *International journal of mental health systems,* 14, pp. 10.

S, B. J. and et al. (2004) 'Meeting the unmet need for depression services with psycho-educational self-confidence workshops: preliminary report', *British Journal of Psychiatry,* 185(12), pp. 511-515.

Saldana, L., Bennett, I., Powers, D., Vredevoogd, M., Grover, T., Schaper, H. and Campbell, M. (2020) 'Scaling Implementation of Collaborative Care for Depression: Adaptation of the Stages of Implementation Completion (SIC)', *Administration and policy in mental health,* 47(2), pp. 188-196.

Scholte Willem, F., Verduin, F., Kamperman Astrid, M., Rutayisire, T., Zwinderman Aeilko, H. and Stronks, K. (2011) 'The effect on mental health of a large scale psychosocial intervention for survivors of mass violence: a quasi-experimental study in Rwanda', *PloS one,* 6(8), pp. e21819.

Sharif-Sidi, Z., Shen, C., Wong, W., Hanson, R., Miller, L., Fickel, K., Green, E., Burns, J., Dunn, C., Somai, M. and Crotty, B. H. (2021) 'Addressing depression and behavioral health needs through a digital program at scale', *Healthcare-the Journal of Delivery Science and Innovation,* 9(2), pp. 7.

Shidhaye, R., Murhar, V., Muke, S., Shrivastava, R., Khan, A., Singh, A. and Breuer, E. (2019) 'Delivering a complex mental health intervention in low-resource settings: Lessons from the implementation of the PRIME mental healthcare plan in primary care in Sehore district, Madhya Pradesh, India', *BJPsych Open,* 5.

Short, K. H. (2016) 'Intentional, explicit, systematic: Implementation and scale-up of effective practices for supporting student mental well-being in Ontario schools', *International Journal of Mental Health Promotion,* 18(1), pp. 33-48.

Sigel Benjamin, A., Benton Adam, H., Lynch Christian, E. and Kramer Teresa, L. (2013a) 'Characteristics of 17 statewide initiatives to disseminate trauma-focused cognitive-behavioral therapy (TF-CBT)', *Psychological Trauma: Theory, Research, Practice, and Policy,* 5(4), pp. 323-333.

Sigel Benjamin, A., Kramer Teresa, L., Conners-Burrow Nicola, A., Church Janice, K., Worley Karen, B. and Mitrani Nicholas, A. (2013b) 'Statewide dissemination of trauma-focused cognitive-behavioral therapy (TF-CBT)', *Children and Youth Services Review,* 35(6), pp. 1023-1029.

Sijbrandij, M. (2018) 'Implementing scalable interventions for common mental disorders in response to the Syrian refugee crisis: first results regarding Problem Management Plus (PM+) programs', *European psychiatry,* 48, pp. S44-.

Singh, A., Nemiro, A., Malik, A., Guimond, M.-F., Nduwimana, E., Likindikoki, S., Annan, J. and Tol Wietse, A. (2021) 'Cultural adaptation of a scalable psychological intervention for Burundian refugee adolescents in Tanzania: a qualitative study', *Conflict and health,* 15(1), pp. 73.

Singla Daisy, R., Weobong, B., Nadkarni, A., Chowdhary, N., Shinde, S., Anand, A., Fairburn Christopher, G., Dimijdan, S., Velleman, R., Weiss, H. and Patel, V. (2014) 'Improving the scalability of psychological treatments in developing countries: an evaluation of peer-led therapy quality assessment in Goa, India', *Behaviour research and therapy,* 60, pp. 53-9.

Solberg Leif, I., Crain, A. L., Maciosek Michael, V., Unutzer, J., Ohnsorg Kris, A., Beck, A., Rubenstein, L., Whitebird Robin, R., Rossom Rebecca, C., Pietruszewski Pamela, B., Crabtree Benjamin, F., Joslyn, K., Van de Ven, A. and Glasgow Russell, E. (2015) 'A stepped-wedge evaluation of an initiative to spread the collaborative care model for depression in primary care', *Annals of family medicine,* 13(5), pp. 412-20.

Stuart, S., Schultz, J. and Ashen, C. (2018) 'A New Community-Based Model for Training in Evidence-Based Psychotherapy Practice', *Community Mental Health Journal,* 54(7), pp. 912-920.

Teesson, M., Newton, N., Slade, T., Chapman, C., Birrell, L., Mewton, L., Mather, M., Hides, L., McBride, N., Allsop, S. and et al. (2021) 'Combined prevention for substance use, depression and anxiety in adolescence: a

cluster randomised controlled trial of an online universal intervention', *Alcoholism: clinical and experimental research,* 45(SUPPL 1), pp. 75A-.

Teesson, M., Newton Nicola, C., Slade, T., Chapman, C., Birrell, L., Mewton, L., Mather, M., Hides, L., McBride, N., Allsop, S. and Andrews, G. (2020) 'Combined prevention for substance use, depression, and anxiety in adolescence: a cluster-randomised controlled trial of a digital online intervention', *Comment in: Lancet Digit Health. 2020 Feb;2(2):e52-e53 PMID: 33334558 [https://www.ncbi.nlm.nih.gov/pubmed/33334558],* 2(2), pp. e74-e84.

Tol, W. A., Leku, M. R., Lakin, D. P., Carswell, K., Augustinavicius, J., Adaku, A., Au, T. M., Brown, F. L., Bryant, R. A., Garcia-Moreno, C., Musci, R. J., Ventevogel, P., White, R. G. and Ommeren, M. v. (2020) 'Guided self-help to reduce psychological distress in south Sudanese female refugees in Uganda: a cluster randomised trial', *Lancet Global Health,* 8(2), pp. e254-e263.

van Dam, L., Rhodes, J. and Spencer, R. (2021) 'Youth-Initiated Mentoring as a Scalable Approach to Addressing Mental Health Problems During the COVID-19 Crisis', *JAMA psychiatry,* 78(8), pp. 817-818.

Vellakkal, S. and Patel, V. (2015) 'Designing Psychological Treatments for Scalability: The PREMIUM Approach', *Erratum in: PLoS One. 2015;10(8):e0136976 PMID: 26305110 [https://www.ncbi.nlm.nih.gov/pubmed/26305110],* 10(7), pp. e0134189.

Wainberg, M. L., Gouveia, M. L., Stockton, M. A., Feliciano, P., Suleman, A., Mootz, J. J., Mello, M., Salem, A. F., Greene, M. C., Bezuidenhout, C., Ngwepe, P., Lovero, K. L., dos, S., P, F., Schriger, S. H., Mandell, D. S., Mulumba, R., Anube, A. N., Mabunda, D., Mandlate, F., Cournos, F., Alves-Bradford, J. M., Nicholson, T., Kann, B., Fumo, W., Duarte, C. S., Mari, J. D., Mello, M. F., Mocumbi, A. O., Oquendo, M. A. and Weissman, M. M. (2021) 'Technology and implementation science to forge the future of evidence-based psychotherapies: the PRIDE scale-up study', *Evidence-Based Mental Health,* 24(1), pp. 19-24.

Yuxuan, C., Stefanie, Shuen Sheng, F. and Daniel (2016) 'Community Mental Health as a Population-based Mental Health Approach', *The Israel journal of psychiatry and related sciences,* 53(1), pp. 33-38.

## Other references

Ahlen, J., Hursti, T., Tanner, L., Tokay, Z., & Ghaderi, A. (2018). Prevention of Anxiety and Depression in Swedish School Children: a Cluster-Randomized Effectiveness Study. Prevention science: the official journal of the Society for Prevention Research, 19(2), 147-158. https://doi.org/10.1007/s11121-017-0821-1

Beck AT, Epstein N, Brown G, Steer RA. An inventory for measuring clinical anxiety: psychometric properties. *J Consult Clin Psychol.* 1988;56:893–897

Beck, A. T., Steer, R. A., Ball, R., & Ranieri, W. (1996). Comparison of Beck depression inventories – IA and II in psychiatric outpatients. Journal of personality assessment, 67(3), 588–597. doi:10.1207/s15327752jpa6703_13. Accessed April 14, 2011, from doi:dx.doi.org.

Brunton, G., Oliver, S. and Thomas, J., 2020. Innovations in framework synthesis as a systematic review method. *Research Synthesis Methods*, *11*(3), pp.316-330.

Chekole, Y. A., & Abate, S. M. (2021). Global prevalence and determinants of mental health disorders during the COVID-19 pandemic: A systematic review and meta-analysis. Annals of Medicine and Surgery, 68, 102634.

Davidson, J. R., Book, S. W., Colket, J. T., Tupler, L. A., Roth, S., David, D., Hertzberg, M., Mellman, T., Beckham, J. C., Smith, R. D., Davison, R. M., Katz, R., & Feldman, M. E. (1997). Assessment of a new self-rating scale for post-traumatic stress disorder. Psychological medicine, 27(1), 153–160. https://doi.org/10.1017/s0033291796004229

Fuhr, D. C., Acarturk, C., Sijbrandij, M., Brown, F. L., Jordans, M. J., Woodward, A., ... & Roberts, B. (2020). Planning the scale up of brief psychological interventions using theory of change. BMC health services research, 20(1), 1-9.

Hamdani, S. U., Huma, Z. E., Suleman, N., Warraitch, A., Muzzafar, N., Farzeen, M., ... & Wissow, L. S. (2021). Scaling-up school mental health services in low resource public schools of rural Pakistan: the Theory of Change (ToC) approach. International journal of mental health systems, 15(1), 1-10.

Klaic, M., Kapp, S., Hudson, P., Chapman, W., Denehy, L., Story, D., & Francis, J. J. (2022). Implementability of healthcare interventions: an overview of reviews and development of a conceptual framework. Implementation Science, 17(1), 1-20.

Kola, L., Kohrt, B. A., Hanlon, C., Naslund, J. A., Sikander, S., Balaji, M., ... & Patel, V. (2021). COVID-19 mental health impact and responses in low-income and middle-income countries: reimagining global mental health. The Lancet Psychiatry, 8(6), 535-550.

National Institute of Mental Health (2022). *Anxiety Disorders*. Retrieved October 20, 2022, from https://www.nimh.nih.gov/health/topics/anxiety-disorders.

National Institute of Mental Health (2022). *Depression*. Retrieved October 20, 2022, from https://www.nimh.nih.gov/health/topics/depression.

National Institute of Mental Health (2022). *Post-Traumatic Stress Disorder*. Retrieved October 20, 2022, from https://www.nimh.nih.gov/health/topics/post-traumatic-stress-disorder-ptsd.

Nochaiwong, S., Ruengorn, C., Thavorn, K., Hutton, B., Awiphan, R., Phosuya, C., ... & Wongpakaran, T. (2021). Global prevalence of mental health issues among the general population during the coronavirus disease-2019 pandemic: a systematic review and meta-analysis. Scientific reports, 11(1), 1-18.

Nguyen, D. T. K., McLaren, L., Oelke, N. D., & McIntyre, L. (2020). Developing a framework to inform scale-up success for population health interventions: a critical interpretive synthesis of the literature. Global health research and policy, 5(1), 1-11.

Racine, N., McArthur, B. A., Cooke, J. E., Eirich, R., Zhu, J., & Madigan, S. (2021). Global prevalence of depressive and anxiety symptoms in children and adolescents during COVID-19: a meta-analysis. JAMA pediatrics, 175(11), 1142-1150.

Troup, J., Fuhr, D. C., Woodward, A., Sondorp, E., & Roberts, B. (2021). Barriers and facilitators for scaling up mental health and psychosocial support interventions in low-and middle-income countries for populations affected by humanitarian crises: a systematic review. International journal of mental health systems, 15(1), 1-14.

Sadler, K., Vizard, T., Ford, T., Marchesell, F., Pearce, N., Mandalia, D., Davis, J., Brodie, E., Forbes, N., Goodman, A. and Goodman, R., 2018. Mental health of children and young people in England, 2017.

Shea, B.J., Grimshaw, J.M., Wells, G.A., Boers, M., Andersson, N., Hamel, C., Porter, A.C., Tugwell, P., Moher, D. and Bouter, L.M., 2007. Development of AMSTAR: a measurement tool to assess the methodological quality of systematic reviews. *BMC medical research methodology*, *7*(1), pp.1-7.

Shea, B.J, Reeves. B.C, Wells. G. Thuku, M, Hamel C, Moran J, Moher D, Tugwell P, Welch V, Kristjansson E (2017) AMSTAR 2: a critical appraisal tool for systematic reviews that include randomised or nonrandomised studies of healthcare interventions, or both. British Medical Journal 358: j4008.

Simmons R, Fajans P, Ghiron L. Introduction. In: Simmons R, Fajans P, Ghiron L, editors. Scaling up health service delivery: from pilot innovations to policies and programmes. Geneva: WHO; 2007. p. vii–xvii.

Santomauro, D. F., Herrera, A. M. M., Shadid, J., Zheng, P., Ashbaugh, C., Pigott, D. M., & Ferrari, A. J. (2021). Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic. The Lancet, 398(10312), 1700-1712.

Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. Archives of internal medicine, 166(10), 1092–1097. https://doi.org/10.1001/archinte.166.10.1092

Takahashi, K., Takada, K., & Hirao, K. (2019). Feasibility and preliminary efficacy of a smartphone application intervention for subthreshold depression. Early intervention in psychiatry, 13(1), 133–136. https://doi.org/10.1111/eip.12540

WHO/ExpandNet. Practical guidance for scaling up health service innovations. Geneva: WHO; 2009.

WHO. Scaling up health service delivery: from pilot innovations to policies and programmes. Geneva: World Health Organization; 2

**International Public Policy Observatory (IPPO)**
An ESRC funded initiative to provide decision-makers in government at all levels with access to the best available global evidence on the social impacts of the COVID-19 pandemic, and the effectiveness of policy responses. IPPO is a collaboration between the Department of Science, Technology, Engineering and Public Policy (STEaPP) and the EPPI Centre at UCL; Cardiff University; Queen's University Belfast; the University of Glasgow; the University of Auckland and the University of Oxford, together with think tanks including the International Network for Government Science (INGSA) and academic news publisher The Conversation.

**EPPI Centre**
Founded in 1996, the EPPI Centre is a specialist centre in the UCL Social Research Institute. It develops methods: (i) for the systematic reviewing and synthesis of research evidence; and (ii) for the study of the use research. As well as being directly involved in the academic study and the practice of research synthesis and research use, the centre provides accredited and short course training programmes in research synthesis and social policy and research.

**UCL Social Research Institute (SRI)**
The SRI (formerly the Department of Social Science) is one of the leading centres in the UK for multidisciplinary teaching and research in the social sciences. With more than 180 academic, research and professional staff, it works to advance knowledge and to inform policy in areas including gender, families, education, employment, migration, inequalities, health and child/adult wellbeing.

.....

**First produced in 2022 by:**

**International Public Policy Observatory**
**Department of Science, Technology, Engineering and Public Policy (STEaPP)**
**Shropshire House (4th Floor), 11-20 Capper Street, London WC1E 6JA**

https://covidandsociety.com | Twitter: @covidandsociety

ISBN: 978-1-911605-35-5

Design and editorial support by: Lionel Openshaw

**This document is available in a range of accessible formats including large print. Please contact the UCL Social Research Institute for assistance.**

**Email: ioe.sriadmin@ucl.ac.uk**