Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

emotional suppression to preserve group harmony, patients with cancer are reluctant to disclose their feelings to family or friends to avoid being a burden or disrupting relationships.[8] Such emotional restraint could hinder early detection and diagnosis of comorbid mental health disorders. Furthermore, Chinese adults with mental health illnesses are hesitant to seek help from psychiatrists because of their unfamiliarity with and distrust of mental health services and concerns about affordability.[7]

We propose several recommendations to address the mental health burden among Chinese patients with cancer. First, as part of National Comprehensive Cancer Network guidelines, brief psychological distress screenings should be integrated into clinical care settings throughout the cancer care continuum to facilitate early detection of mental health disorders and timely referral to mental health specialists. To address the shortage of mental health professionals in cancer care, a psycho-oncology training system could be established to improve oncology nurses' skills in managing common mental health disorders.[9] Second, situating mental health providers in community health centres and co-locating them in cancer clinics would facilitate access to mental health care, because these venues are where patients receive post-cancer treatment services. Third, educational programmes, peer support groups, and social media platforms would be helpful to reduce the stigma related to cancer and mental health disorders and help enhance patients' receptiveness to psychological treatments. Fourth, more supportive resources are needed to alleviate the caregiving burden on family members, including psychological, financial, and employment support. For example, couple-based psychosocial interventions have shown benefits in lessening psychological distress for patients and caregivers, and in improving relationships.[10] Fifth, policies to increase public health insurance coverage for mental health treatment should be considered to foster patients' access to good-quality mental health care.

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1 Zhou M, Wang H, Zeng X, et al. Mortality, morbidity, and risk factors in China and its provinces, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. *Lancet* 2019; **394:** 1145–58.
2 Yang YL, Liu L, Wang Y, et al. The prevalence of depression and anxiety among Chinese adults with cancer: a systematic review and meta-analysis. *BMC Cancer* 2013; **13:** 393.
3 Du L, Shi HY, Yu HR, et al. Incidence of suicide death in patients with cancer: a systematic review and meta-analysis. *J Affect Disord* 2020; **276:** 711–19.
4 He Y, Sun LY, Peng KW, et al. Sleep quality, anxiety and depression in advanced lung cancer: patients and caregivers. *BMJ Support Palliat Care* 2020; published online April 6. https://doi.org/10.1136/bmjspcare-2018-001684.
5 Yang YL, Sui GY, Liu GC, Huang DS, Wang SM, Wang L. The effects of psychological interventions on depression and anxiety among Chinese adults with cancer: a meta-analysis of randomized controlled studies. *BMC Cancer* 2014; **14:** 956.
6 Tang PL, Mayer DK, Chou FH, Hsiao KY. The experience of cancer stigma in Taiwan: a qualitative study of female cancer patients. *Arch Psychiatr Nurs* 2016; **30:** 204–09.
7 Shi W, Shen Z, Wang S, Hall BJ. Barriers to professional mental health help-seeking among Chinese adults: a systematic review. *Front Psychiatry* 2020; **11:** 442.
8 Wei M, Su JC, Carrera S, Lin SP, Yi F. Suppression and interpersonal harmony: a cross-cultural comparison between Chinese and European Americans. *J Couns Psychol* 2013; **60:** 625–33.
9 Kubota Y, Okuyama T, Uchida M, et al. Effectiveness of a psycho-oncology training program for oncology nurses: a randomized controlled trial. *Psychooncology* 2016; **25:** 712–18.
10 Regan TW, Lambert SD, Girgis A, Kelly B, Kayser K, Turner J. Do couple-based interventions make a difference for couples affected by cancer? A systematic review. *BMC Cancer* 2012; **12:** 279.

Mitigating the impacts of COVID-19: where are the mental health trials?

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COVID-19 prompted rapid mobilisation of health services and medical science in the face of unprecedented challenges. When COVID-19 emerged in 2020, medical science delivered, and delivered quickly. Using large-scale multicentre trials, researchers in partnership with health services established the ability of cheap and scalable interventions (such as corticosteroids) to save lives, and rapidly showed the futility of anecdotally endorsed

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repurposed drugs (such as hydroxychloroquine). The effectiveness of vaccinations was quickly established in phase 2 and 3 trials, providing the confidence to roll out successful vaccine programmes.

Trials have been fundamental to the global pandemic response, but mental health has not been part of this success story. In short, the mental health research community has been successful at describing the nature of the impact of COVID-19, but less successful at generating solutions and providing clinical trial data to establish what works in mitigating the impacts.

In the first instance, insight can be gained from looking back at the initial efforts of the mental health community, in planning for the evolving pandemic. In March, 2020, an important rapid review was published in *The Lancet*.[1] Brooks and colleagues explored the anticipated psychological impact of COVID-19 (specifically the societal disruption that lockdown, infection, and quarantine would cause), and what might be done to mitigate this. They predicted negative effects on mental health, and made broad suggestions for a public health response, including identification of those at greatest risk (such as health workers or people with pre-existing psychiatric illness). On the basis of limited trial evidence, the authors suggested some therapeutic options to reduce these effects, such as support groups for people who were quarantining at home. However, they noted a dearth of trial-based evidence to inform the mitigation of psychological impact and were unable to say with any confidence what would work. Two Position Papers from early in the pandemic also highlighted research priorities in understanding the psychological impact of the pandemic;[2,3] these formed a starting point from which to coordinate and deploy research effort and resources. The need to assemble evidence of what works to mitigate mental illness was generally recognised, but the papers offered no specific encouragement to deliver an ambitious trials programme. The emphasis in both of these documents was on mapping psychological effects and underlying mechanisms.

For more of the **UPH COVID-19 Programme** see https://www.nihr.ac.uk/covid-studies/

For the **RECOVERY trial platform** see https://www.recoverytrial.net/

Since these initial publications, others have observed a rapid growth in activity among the mental health research community,[4,5] but this research has been more about describing the problem rather than intervening. A thoughtful paper by Demkowicz and colleagues[5] detailed a rapid but fragmented response, referring to the high volume of research studies with overlapping survey designs capturing quantitative data around depression, anxiety, and loneliness. Many of these studies have used suboptimal sampling methods[4] or analytical methods that do not account for biases or confounding. Demkowicz and colleagues make important suggestions for improving cross-institutional collaboration, but make few comments on whether or how the research community has helped to mitigate the impact of COVID-19. Specifically, clinical trials are scarcely mentioned.

In terms of the physical health response, the UK was at the forefront of the rapid evaluation of existing or repurposed treatments. The randomised evaluation of COVID-19 therapy (RECOVERY) trial is the most notable example in which the time from design to delivery of trials was reduced from years to weeks. Trialists drafted the RECOVERY protocol on March 10, 2020, and the results were announced for dexamethasone just 98 days later, after enrolling more than 11 000 patients.[6] Thereafter, the treatment of COVID-19 evolved rapidly and survival rates were transformed. In short, rapidly completed trials saved lives.

How was this possible? The UK was able to make rapid advances after years of strategic investment in the National Health Service (NHS) research infrastructure (including comprehensive research networks). At the start of the pandemic, researchers were told to halt all non-COVID-19 research and devote NHS research infrastructure to understanding and fighting the pandemic. A national prioritisation process was instituted (the National Institute for Health Research Urgent Public Health [UPH] COVID-19 Programme). By May, 2021, 98 UPH studies had been supported following an assessment process and scrutiny by a specially constituted committee. The UPH Programme most notably supported the RECOVERY trial platform, which has now recruited more than 40 000 participants to trials of physical treatments.[6] Surprisingly, only two UPH studies relate to mental health: our own trials (the behavioural activation in social isolation [BASIL] trial[7] and a follow-on trial BASIL+ ISRCTN63034289), designed to evaluate brief psychosocial interventions to prevent depression and loneliness in susceptible populations (a research priority identified by Holmes and colleagues[2] and O'Connor and colleagues[3]). Two other ambitious randomised controlled trials are

underway in the UK to specifically address mental health needs within the COVID-19 context: the supporting parents and kids through lockdown experiences trial (also known as SPARKLE), which examines the use of a smartphone application for parents to mitigate the emotional and behavioural impacts of COVID-19 on families;[8] and the child anxiety treatment in the context of COVID-19 (CoCAT) trial, which is evaluating an online intervention for children with anxiety problems during COVID-19 restrictions. These were not adopted by the UPH Programme. The paucity of psychosocial evaluative research mirrors the global imbalance in trials, among which research activity has focussed on pharmaceutical interventions rather than behavioural or public health solutions to the pandemic.[9] However, there are examples of psychological insights and behavioural theory being used to design and test interventions aimed at combating so-called vaccine hesitancy.[10]

What have we learned from delivering mental health trials in the time of COVID-19? First, trials can be more efficient. When supported by the UPH Programme and with a facilitative approval process, we were able to design the BASIL trial and recruit the first participant within 11 weeks. 12 NHS Trusts signed up to deliver the BASIL trial. For CoCAT, the time from the study start date to first recruitment was 14 weeks, with 19 NHS Trusts participating, and this was mostly attributable to an efficient approvals process. The UPH approach and approvals process provides an important lesson for the efficient delivery of trials in mental health and we should not discard this model after the pandemic.

Second, trials require large collaborative networks in their design and delivery. The fragmentation and duplication of effort by the mental health research community during COVID-19 is now clearly described,[5] and we believe describing the nature of the problem via repeated surveys has acted against the collective delivery of trials. Patients and the public should expect collaboration, coproduction, and research prioritisation to deliver fully powered trials. Again, the RECOVERY trial shows this approach is possible, with 176 hospitals signed up and recruiting within weeks, and a series of treatment uncertainties resolved quickly.[6] As one treatment uncertainty was resolved, further questions were prioritised by an independent expert group. We speculate that funders will expect this level of collaboration, responsiveness, and efficiency in the future. We also reflect on the positive experience reported by collaborating centres from the CoCAT and BASIL trials. As with RECOVERY, for many clinicians it was their first experience of trial collaboration. By contributing to collaborative interventional research, they told us they gained personally and professionally.

COVID-19 will have continuing and long-term effects on mental health, and many unknowns remain. For some problems, the scaling up of existing treatments is a sufficient response. However, many problems will be new and will exacerbate pre-existing health inequalities;[5] these will require new evidence-informed solutions. Some of the impacts of COVID-19 will be on sections of the population for whom innovative (and unevaluated) methods of delivery (such as eHealth) are needed in non-mental health settings, such as schools. Other impacts are on the NHS workforce, for whom the problems of workplace stress and moral injury require scalable interventions and decisions about when, how, and whether to intervene. Some new problems, such as long COVID, will require increased integration of psychosocial models of care with physical health services. When evidence is not available to inform mental health practice and policy, then trials should be rapidly designed and delivered at scale to determine which treatment approaches work and discard those that are ineffective. Mental health should always be considered with physical health, and this has become even more urgent during COVID-19. Our speciality has not yet delivered the equivalent of the RECOVERY trial and we should reflect on why this is. Surveys are a necessary response, but not a sufficient response. We would suggest that now is the time to rebalance research activity away from describing the nature of the problem, to intervening and evaluating what works.

For more on the **CoCAT trial** see https://osiresearch.org.uk/co-cat/

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1 Brooks SK, Webster RK, Smith LE, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet* 2020; **395:** 912–20.
2 Holmes EA, O'Connor RC, Perry VH, et al. Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. *Lancet Psychiatry* 2020; **7:** 547–60.
3 O'Connor DB, Aggleton JP, Chakrabarti B, et al. Research priorities for the COVID-19 pandemic and beyond: a call to action for psychological science. *Br J Psychol* 2020; **111:** 603–29.
4 Pierce M, McManus S, Jessop C, et al. Says who? The significance of sampling in mental health surveys during COVID-19. *Lancet Psychiatry* 2020; **7:** 567–68.
5 Demkowicz O, Panayiotou M, Parsons S, et al. Looking back to move forward: reflections on the strengths and challenges of the COVID-19 UK mental health research response. *Front Psychiatry* 2021; **12:** 622562.
6 Wise J, Coombes R. Covid-19: the inside story of the RECOVERY trial. *BMJ* 2020; **370:** m2670.
7 Gilbody S, Littlewood E, McMillan D, et al. Mitigating the psychological impacts of COVID-19 restrictions: the behavioural activation in social isolation (BASIL) pilot randomised controlled trial to prevent depression and loneliness among older people with long term conditions. *medRxiv* 2021; published online May 18. https://doi.org/10.1101/2021.05.17.21257309 (preprint).
8 Kostyrka-Allchorne K, Creswell C, Byford S, et al. Supporting parents & kids through lockdown experiences (SPARKLE): a digital parenting support app implemented in an ongoing general population cohort study during the COVID-19 pandemic: a structured summary of a study protocol for a randomised controlled trial. *Trials* 2021; **22:** 267.
9 Michie S, West R. Sustained behavior change is key to preventing and tackling future pandemics. *Nat Med* 2021; **27:** 749–52.
10 Freeman D, Loe BS, Yu L-M, et al. Effects of different types of written vaccination information on COVID-19 vaccine hesitancy in the UK (OCEANS-III): a single-blind, parallel-group, randomised controlled trial. *Lancet Public Health* 2021; published online May 12. https://doi.org/10.1016/S2468-2667(21)00096-7.