without (OR = 2.18, 95% CI = 1.63–2.90, P < .00001). Increased mortality risk was found on subgroup analysis for participants with pre-existing schizophrenia (OR = 2.55, 95% CI = 1.38–4.71, P = .003) and dementia (OR = 3.83, 95% CI = 2.42–6.06, P < .00001). There was no statistically significant difference in the severity of illness when comparing the two groups. There was a statistically significant increase in the number of participants with comorbid diabetes and chronic lung disease in those with a pre-existing mental health or neurocognitive disorder compared to those without.
Conclusion. The results show that people over 18 years with a pre-existing mental health or neurocognitive disorder have an increased risk of mortality from COVID-19 and are more likely to have comorbid diabetes and chronic lung disease. These results highlight the need for better physical health monitoring and management for this group of people and better integration of mental and physical health services, as well as adding to the evidence that they should be prioritised in the ongoing COVID-19 vaccination schedules worldwide.

A Qualitative Study Exploring the Role of Hindsight Bias in the Process of Reviewing Clinical Practice Prior to Adverse Incidents

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Aims. To explore the effect of hindsight bias on retrospective reviews of clinical decision making prior to adverse incidents to inform future approaches to incident investigations.
Methods. We have undertaken focus groups with doctors of varying grades across the North West of England and North Wales. A vignette based on a real-life case from the publicly available NHS England Homicide Independent Investigation report database was presented to each group in one of three versions which differed in terms of the ending of the vignettes (i.e. suicide, homicide, no adverse incident). Using a semi-structured interview approach, the group participants were encouraged by the facilitators to reflect on issues relating to risk and risk management. All groups were provided with the same vignette which initially made no reference to the outcome and asked to comment on matters of risk and risk management. Halfway through the discussion, one of the three outcomes was disclosed, and further group discussion was held. The recorded interviews were transcribed and thematic analysis was undertaken using an adapted Framework Method.
Results. Preliminary results (n = 10) indicate that participants identified the potential for significant harm, particularly to others, and identified evidence of key psychopathological and historical correlates to support assertive management of risk and admission to hospital.

Whilst knowledge of the outcome did not lead to participants changing their favoured management plans, it did alter how they appraised the case and led to participants constructing "narrative" explanations for the outcome given. The level of conviction participants held for their management plan reduced when their expectations about the outcome were confounded.

Participants presented with the suicide outcome vignette described their difficulties appraising risk to others and their over-sensitivity to that risk. Participants faced with the 'no adverse outcome' vignette perceived the original management plan far more favourably in hindsight. The groups that were presented with the homicide outcome vignette initially focused on both risks to self and others as well as the perceived need for further information. Following knowledge of the outcome, there was a tendency to highlight parts of the letter pertaining to risk to others which they previously had not given as much attention.
Conclusion. The initial analysis of our data confirms the findings from previous studies that hindsight colours the appraisal of adverse events. However, this study is novel in that it describes the nature of the thought processes underpinning the influence of hindsight on appraisals of risk.

Microbiome Modulators and Mood Disorders: Using a Multi-Strain Probiotic - Bio-Kult® Advanced - in Patients With Low Mood

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Aims. The aim of this proof-of-concept study was to understand the effect of daily intake of a 14-strain probiotic on mood, reward learning and emotional and cognitive processing in adults with low mood in the absence of prescribed medication. Salivary cortisol was measured as a marker for physiological stress.
Methods. In this parallel-group double-blind, placebo-controlled trial, 80 healthy adults with self-identified low mood were randomised to receive either the 14-strain probiotic or placebo for a duration of 4 weeks. Data were collected from participants at baseline (week 0) and post-intervention (week 4).
Results. Probiotic intake significantly reduced depression scores (by 50%) compared to baseline, as measured by the Patient Health Questionnaire-9 (PHQ-9) scale ($p < 0.05$). Analysis of individual items in the PHQ-9 revealed that participants taking probiotics reported improved concentration relative to baseline (+ 51%, $p < 0.05$) and felt less tired compared to placebo (−21%, $p < 0.01$).

Regarding emotional processing, the probiotic group was more accurate at recognising facial expressions compared to those receiving placebo (facial emotion recognition test, +12%, $p < 0.05$). Furthermore, the probiotic group performed less well at the reward learning task relative to the placebo group (probabilistic instrumental learning task, $p < 0.05$) and was less vigilant to emotional cues compared neutral cues (dot-probe unmasked test, −8%, $P < 0.05$). The probiotic group also showed increased susceptibility to emotional interference during a cognitive learning task, relative to placebo (auditory visual learning task, −18% $p < 0.05$).

The study also revealed a downward trend in salivary cortisol in the probiotic group over 4 weeks.

Together, these results suggest that probiotics may work via a different psychological mechanism to that of conventional antidepressants. In other words, probiotics may work by reducing emotional salience across all emotions whereas conventional antidepressants

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are thought to work by increasing bias to positive emotional cues and decreasing bias to negative ones.
Conclusion. These data suggest that intake of Bio-Kult® Advanced has an effect on mood and that this is achieved in ways distinct from the effects of pharmacological antidepressants. While more research is needed, these results suggest that certain probiotics could form part of an 'early intervention' strategy for people experiencing low mood. A second randomised controlled trial (currently recruiting) will provide data on this intervention in patients with a formal diagnosis of depression undergoing concurrent pharmacological treatment.

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Psychiatric, Neurophysical and Neurocognitive Sequelae of Post-Acute COVID-19 Syndrome: A Systematic Review

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Aims. COVID-19 causes cognitive, neurophysical and psychiatric sequalae that persist beyond the acute illness. These appear to be independent of the direct impact on respiratory function although the impact of multiorgan, especially brain pathology, may be a contributory factor – as may psycho-social effects of the disease. We performed a systematic review of literature to assess the sequelae of post-acute COVID-19 syndrome to better understand the need for dedicated interventions to improve functioning.
Methods. We conducted a systematic review of reports included in MEDLINE, PsycINFO, and EMBASE. We searched for cohort studies exploring psychiatric and neuro-cognitive sequelae of post-acute COVID-19 in adults with a sample size of at least 100. The search was conducted on 4 February 2022. Findings are reported in line with Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Two authors independently assessed the included studies' methodological quality using The National Institute of Health (NIH) quality assessment tool for observational cohort and cross-sectional studies and all records were rated as good or fair.
Results. Our search identified 66 records and 14 met protocol requirements. The studies varied in sample size ranging from 100 to 3762 participants. Time to follow-up ranged from 1–12 months. Main symptoms identified by a majority of the studies were; Fatigue (25% to 85%) and Sleep problems (20% to 79%). Psychiatric symptoms; Anxiety (19% to 56%), Depression (11% to 47%), PTSD (6% to 43%) and altered sense of reality (3% to 15%). Neuro-cognitive symptoms; Cognitive dysfunction (25% to 85%), brain fog (12% to 81%), memory problems (24% to 73%), concentration difficulties (25% to 54%), and attention deficit (27%).

Female sex, advanced age, pre-morbid asthma or COPD, increased disease severity, high BMI and new neurological complications during hospitalisation were some of the identified risk factors for persistent symptoms in post-acute COVID-19. One study identified male sex as a risk factor for moderate to severe PTSD. Current evidence suggests that symptoms decrease over time.
Conclusion. There is clear evidence of neuro-physical, psychiatric and neurocognitive sequelae in post-acute COVID-19 syndrome. Differences in assessing and reporting findings makes it difficult to synthesize meaningful information. Identifying and formulating standardised assessments for outcome measures and reporting systems would be useful in future research. Further research into symptoms of post-acute COVID-19, to understand the pathophysiology will better enable us to raise public awareness, introduce preventative measures and incorporate appropriate treatment strategies for rehabilitation.

Frequency of Diagnostic Classification Systems' Usage by Mental Health Professionals in Day-to-Day Clinical Practice

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Aims. Diagnostic classification systems (DCSs) are medical models constructed by experts with the purpose of facilitating diagnostic processes. Specifically in psychiatry, DCSs serve as mental health professionals' major diagnostic tool. Several studies, however, suggest that mental health professionals may not systematically apply the DCSs in day-to-day practice. The primary aim of this secondary research was to assess the actual frequency of DCSs' application in psychiatric practice. All DCSs were considered. The secondary aims were to investigate the mode of DCSs' application (e.g., assign diagnosis, inform treatment, administrative/billing or teaching purposes), and to assess if DCSs' usage patterns vary depending on the clinicians' specific occupation (e.g., psychiatrists, psychologists) and country of employment.
Methods. The bibliographic databases of MEDLINE Via Ovid, PsycInfo, Web of Science and Global Health were searched from 1/2000–12/2020. All primary studies assessing DCSs' frequency of application by mental health professionals were eligible for inclusion. The search yielded nine eligible articles. The total number of participants from all included studies was 10,388. The study samples were diverse, including practitioners from a wide variety of geographical locations, languages, and income-level countries.
Results. The results of the study showed that 69% (95%CI = 58–80%) of the responders use DCSs "often, almost always or always" in day-to-day practice. Regarding the mode of DCSs' application, responders stated that they use DCSs most frequently for administrative/billing purposes and assigning a diagnosis. The study's results also showed that 68% (95%CI = 45–90%) of psychiatrists and 74% (95%CI = 43–100%) of psychologists use the DCSs "often, almost always or always". Subgroup analysis based on responders' country of employment suggest that the frequency of "often, almost always or always" DCSs' usage (according to World Health Organization regions) were: for the Region of the Americas 75.3%, for the African Region 73.5%, for the Western Pacific Region 71.6%, for the European Region 69.4%, for the South-East Asia Region 66.8%, and for the Eastern Mediterranean Region 57.1%.
Conclusion. The study's outcomes indicate that DCSs are integrated into the daily practices of mental health professionals worldwide. Further research is needed, however, in order to assess in more depth DCSs' application practices (e.g., comparative usage of different DCSs, types of mental disorders, patients and settings where DCSs are more frequently applied). Such findings could be valuable, since they can be used to help appraise the quality of DCSs' actual use, the impact of DCSs on clinical care

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