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.

serum NMDAR antibodies in patients with schizophrenia. In this study, NMDAR IgG antibodies were detected in 19% of patients using a live CBA.[7] Antibodies were found only in serum (not in CSF), had substantially lower titres in comparison with samples from patients with anti-NMDAR encephalitis, and were directed against different glutamate receptor ionotropic NMDA 1 epitopes, as shown using immuno-competition assays. However, NMDAR antibodies from patients with schizophrenia modified surface dynamics and the nanoscale organisation of NMDARs and its anchoring partner, the ephrinB2 receptor, suggesting a pathogenic role of these antibodies.

The meta-analysis by Cullen and colleagues identified disease stage as significant effect in cross-sectional studies, but this analysis was limited by incomplete primary data with poor reporting of patient characteristics in the studies included. As the authors state, it is also concerning that low-quality case-control studies yielded significantly higher ORs than high-quality studies. For most studies, inadequate clinical information led to these low-quality scores. These two points illustrate the importance of increasing the quality of reporting in studies—from the recruitment strategy to the analysis plan—to allow a solid interpretation of results and to enable robust meta-analyses.

In summary, this meta-analysis identifies the pain points in the analysis of serum NMDAR antibodies in patients with psychosis, namely assay types, disease stage, and reporting quality. Further studies are now needed that compare NMDAR antibody frequencies using different assays (live *vs* fixed CBAs) in both patients and controls, preferably in serum and CSF. Such studies should also assess differences in the clinical presentation between antibody-positive and antibody-negative patients, for example by regarding the clinical spectrum of psychotic symptoms and additional symptoms such as cognitive impairment, and they should follow the temporal dynamics of symptoms in longitudinal study designs.

I declare no competing interests.

Carsten Finke
carsten.finke@charite.de

Department of Neurology, Charité University Medicine Berlin, Berlin 10117, Germany; and Berlin School of Mind and Brain, Humboldt University Berlin, Berlin, Germany

1 Khandaker GM, Cousins L, Deakin J, Lennox BR, Yolken R, Jones PB. Inflammation and immunity in schizophrenia: implications for pathophysiology and treatment. *Lancet Psychiatry* 2015; **2:** 258–70.
2 Pape K, Tamouza R, Leboyer M, Zipp F. Immunoneuropsychiatry—novel perspectives on brain disorders. *Nat Rev Neurol* 2019; **15:** 317–28.
3 Menninger KA. Psychoses associated with influenza. *J Am Med Assoc* 1919; **72:** 235.
4 Dalmau J, Armangué T, Planagumà J, et al. An update on anti-NMDA receptor encephalitis for neurologists and psychiatrists: mechanisms and models. *Lancet Neurol* 2019; **18:** 1045–57.
5 Cullen AE, Palmer-Cooper EC, Hardwick M, et al. Influence of methodological and patient factors on serum NMDAR IgG antibody detection in psychotic disorders: a meta-analysis of cross-sectional and case-control studies. *Lancet Psychiatry* 2020; published online Dec 21. https://doi.org/10.1016/S2215-0366(20)30432-6.
6 Gresa-Arribas N, Titulaer MJ, Torrents A, et al. Antibody titres at diagnosis and during follow-up of anti-NMDA receptor encephalitis: a retrospective study. *Lancet Neurol* 2014; **13:** 167–77.
7 Jézéquel J, Johansson EM, Dupuis JP, et al. Dynamic disorganization of synaptic NMDA receptors triggered by autoantibodies from psychotic patients. *Nat Commun* 2017; **8:** 1791.

COVID-19 and psychiatry: can electronic medical records provide the answers?

Published **Online**
November 9, 2020
https://doi.org/10.1016/S2215-0366(20)30479-X

See **Articles** page 130

The COVID-19 pandemic has posed unprecedented challenges for health-care professionals, researchers, and policy makers, particularly in the area of serious mental illness. From the beginning of the pandemic, psychiatric symptoms have complicated medical care and contributed to morbidity and mortality.[1] Conversely, individuals with serious mental illness are known to have a high prevalence of comorbid conditions associated with symptomatic COVID-19, including obesity, hypertension, smoking, and diabetes.[2] Many individuals with psychiatric disorders also live in social conditions that result in high exposure to respiratory viruses, including seasonal coronaviruses.[3] The sheer size and changing nature of the pandemic poses problems for investigators and policy planners investigating COVID-19 exposure and psychiatric disorders. This is particularly true in the USA, where the response to the pandemic has been hampered by the lack of a national medical care system and a patchwork of state and local public health agencies responsible for data collection and disease surveillance.

Burger/Phanie/Science Photo Library

The electronic medical record has become a part of many medical practices in the USA. Although this system has been approached with trepidation by many US health-care providers,[4] data generated by electronic medical records has proven a useful tool for the analysis of somatic and mental health outcomes.[5] In *The Lancet Psychiatry*, Maxime Taquet and colleagues[6] report data collated from electronic medical records by the TriNetX Analytics Network from more than 69 million individuals who received care at 54 US health-care organisations between Jan 20, and Aug 1, 2020. This report provides evidence for what the authors characterise as a bidirectional association between COVID-19 and psychiatric disorders.[6] The first association relates to an increase in newly recognised psychiatric disorders in individuals with COVID-19, with relative risks in the range of 2–3 for anxiety disorders, insomnia, and dementia. The other association characterises an increase in COVID-19 in individuals with pre-existing psychiatric disorders, with an overall relative risk of 1·65.[6] The latter results are largely congruent with a previous study based on another electronic medical record database,[7] although there are some differences in the reported relative risks associated with different psychiatric diagnoses and populations.

Although potentially valuable for population-based studies, data derived from electronic medical records in the USA have limitations, most of which are noted in the report. Distinct from datasets based on national health-care systems, data derived from available electronic medical record-derived databases only capture events that occur in participating health-care organisations. Since the identity of participating health-care organisations and their relative contributions to the dataset are not disclosed, the generalisability of data derived from this population is difficult to assess. In this regard, although the 62 354 COVID-19 cases presented in this report is a large study population,[6] they represent only a fraction of the number of cases reported in the USA during the same time period.[8] In terms of psychiatric disorders, it is possible that the first entry of a diagnosis into the database might not represent the first occurrence of the condition, but rather the first time it is recognised by a health-care provider at a participating health-care organisation, making the timing of symptom onset relating to COVID-19 difficult to evaluate. Furthermore, data from electronic medical records are often lacking in information relevant to COVID-19. These data include detailed information relating to housing density, family size, current employment and immigration status, specific geographic location, and contact with others with COVID-19. Therefore, it is imperative that data derived from electronic medical records be supported by cohort studies that prospectively collect relevant information and biological samples

The changing nature of the COVID-19 pandemic presents a moving target for clinicians, investigators, readers of medical literature, and the general public. Infection rates in different areas are frequently changing. Additionally, new cases, clinical data, and analytic functionalities are being added to available databases. Conclusions based on any one dataset thus require frequent re-examination and re-interpretation. The recent retraction of articles on COVID-19 based on another database[9] highlights the necessity of data sharing and transparency.

More than 100 years have passed since the worldwide influenza pandemic that resulted in a markedly increased rate of neurological and psychiatric sequelae.[10] Despite great advances in medical science, we are faced with some of the same issues relating to the characterisation of a rapidly changing pandemic occurring in different geopolitical environments. Learning to use new tools, such as electronic medical records efficiently should provide some of the essential information needed to understand and control the psychiatric consequences of this pandemic and plan for future ones. In these efforts, we should keep in mind the words of Sir William Osler that, "the best preparation for tomorrow is to do today's work superbly well."

I declare no competing interests. I thank Faith Dickerson, E Fuller Torrey, and Maree Webster for their careful reading of this Comment.

Robert Yolken
ryolken1@jhmi.edu

Department of Pediatrics, Johns Hopkins School of Medicine, Baltimore, MD 21287, USA

1 Xiang YT, Yang Y, Li W, et al. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *Lancet Psychiatry* 2020; **7:** 228–29.
2 Dickerson F, Origoni A, Schroeder J, et al. Natural cause mortality in persons with serious mental illness. *Acta Psychiatr Scand* 2018; **137:** 371–79.
3 Severance EG, Dickerson FB, Viscidi RP, et al. Coronavirus immunoreactivity in individuals with a recent onset of psychotic symptoms. *Schizophr Bull* 2011; **37:** 101–07.
4 Melnick ER, Dyrbye LN, Sinsky CA, et al. The association between perceived electronic health record usability and professional burnout among US physicians. *Mayo Clin Proc* 2020; **95:** 476–87.

5 Casey JA, Schwartz BS, Stewart WF, Adler NE. Using electronic health records for population health research: a review of methods and applications. *Annu Rev Public Health* 2016; **37:** 61–81.

6 Taquet M, Luciano S, Geddes JR, Harrison PJ. Bidirectional associations between COVID-19 and psychiatric disorder: retrospective cohort studies of 62 354 COVID-19 cases in the USA. *Lancet Psychiatry* 2020; published online Nov 9. https://doi.org/10.1016/S2215-0366(20)30462-4.

7 Wang Q, Xu R, Volkow ND. Increased risk of COVID-19 infection and mortality in people with mental disorders: analysis from electronic health records in the United States. *World Psychiatry* 2020; wps.20806.

8 Gold JAW, Rossen LM, Ahmad FB, et al. Race, ethnicity, and age trends in persons who died from COVID-19—United States, May-August 2020. *MMWR Morb Mortal Wkly Rep* 2020; **69:** 1517–21.

9 Piller C, Travis J. Authors, elite journals under fire after major retractions. *Science* 2020; **368:** 1167–68.

10 Kępińska AP, Iyegbe CO, Vernon AC, Yolken R, Murray RM, Pollak TA. Schizophrenia and influenza at the centenary of the 1918–19 Spanish influenza pandemic: mechanisms of psychosis risk. *Front Psychiatry* 2020; **11:** 72.

The shrouded visibility of eating disorders research

Eating disorders affect up to 5% of the population at any point in time, and place an enormous physical, psychological, and financial burden on individuals who are affected and their families. On average, only 50% of people with an eating disorder make a full recovery,[1] and anorexia nervosa has one of the highest mortality rates of all psychiatric disorders.[2] Eating disorders cost between £3·9 and £4·6 billion per year to the National Health Service (NHS) and result in losses of between £6·8 and £8 billion to the economy.[3] To address this major public health problem, the cause and triggers of eating disorders need to be identified and evidence gathered to aid in the development of effective treatments. However, research on eating disorders is remarkably scant. The most recent National Institute for Care Excellence (NICE) guidelines on the recognition and treatment of eating disorders[4] find that the evidence-base for both psychological and pharmacological therapies used to treat eating disorders relies on a few small studies, and that many areas remain under-researched.

To quantify the magnitude of the disparity between research on eating disorders and other mental illnesses, we searched Web of Science for papers mentioning eating disorders in their title ("anorexia nervosa" OR "bulimia nervosa" OR "binge eating disorder" OR "binge eating" OR "eating disorders" OR "disordered eating") and found that, in 2018, only 1390 studies were published. This figure stands in stark contrast to 9064 studies on mood disorders ("depression" OR "depressive symptoms"); 6121 on psychosis ("schizophrenia" OR "psychosis" OR "psychotic symptoms" OR "psychotic experiences" OR "negative symptoms"); 4596 on neurodevelopmental disorders ("ADHD" OR "attention deficit hyperactive disorder" OR "ASD" OR "autism spectrum disorders" OR "autism" OR "autistic traits"), and 1610 on bipolar disorder ("bipolar disorder" OR "mania" OR "hypomania").

An additional factor hindering progress in understanding and treating eating disorders is that the available research base lacks visibility. To quantify this, we explored how often eating disorder research is featured in the highest impact factor psychiatry journals. We found that high impact factor journals publish fewer papers researching eating disorders than papers on other psychiatric conditions, both in absolute and relative terms, despite having featured several letters and articles calling for more research in this field.[5,6] We (FS, ECL) hand-searched all 2018 issues of the top five psychiatry journals by impact factor (JAMA Psychiatry, Molecular Psychiatry, The American Journal of Psychiatry, *The Lancet Psychiatry*, World Psychiatry) yielding a total of 443 new research articles. Of these, only three (1%) featured research focused solely on eating disorders, as opposed to 89 (20%) on schizophrenia, 79 (18%) on depression, 26 (6%) on bipolar disorder, and 36 (8%) on neurodevelopmental disorders. Of all the 1390 papers on eating disorders published in 2018, only 0·2% were published in the top psychiatry journals, compared with 0·9% of those on depression, 1·5% of those on schizophrenia, 1·6% of those on bipolar disorder, and 0·8% of those on neurodevelopmental disorders.

The lower number of eating disorder research papers published annually than for other conditions might reflect the low levels of funding they receive, documented in the recent MQ reports on research funding in mental health.[7] However, these low levels of funding are unlikely to explain the lower relative number of eating disorder studies published in major journals. We believe that this disparity is indicative of the marginalisation of eating disorders among mental health researchers and professionals. Eating disorders are more common in women and are characterised by the presence of intense body image concerns and

Byron Jorjorian/Science Photo Library

Published **Online**
November 20, 2020
https://doi.org/10.1016/S2215-0366(20)30423-5