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.

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Letter to the editor

How has the COVID pandemic affected functional neurological disorder? A mixed-methods analysis

There has been much speculation as to how functional neurological disorder (FND) would be affected by the COVID19 pandemic. With increased anxiety, FND might be expected to deteriorate, and increased somatic attention from checking for signs of COVID might aggravate FND symptoms [1]; alternatively, isolation might provide relief from social contributors to patients' symptoms, and the focus on COVID symptoms might distract from their FND symptoms [2].

To explore this, we conducted a mixed-methods analysis – a qualitative assessment of the follow-up appointments to our specialist functional neurology outpatient clinic in Melbourne during the period of pandemic restrictions (15th March to 15th September), and a quantitative survey of two FND patient organisations, one Australian, one international. Both the clinic audit and the survey were approved by the hospital research ethics committee.

For established FND, the impact of the pandemic appeared relatively benign from our clinic assessments. On average, the 27 patients assessed (mean age 50, 63% female) very slightly improved (mean of 2.7 on a 5-point Likert scale, with 3 indicating 'about the same' and 1 as 'much better'). This was the same (mean of 2.6, p=0.8, t-test) as the 29 patients seen over the same period last year (mean age 46, 69% female). Three were 'much better', attributing their improvement to the interventions they received, though strikingly one improved abruptly after a (non-COVID) febrile illness; one was 'much worse', who, like most who deteriorated, attributed this to consequences of the COVID restrictions – social isolation, therapies being cancelled, exercise opportunities reduced. None reported concerns over COVID infection for themselves, and many reported the COVID had no deleterious impact on them, as they were already isolated; however, a large proportion (10/27, 37%) reported increased anxiety attributed to other causes (compared with 4/29, 14%, last year, p=0.1, Chi-squared), including three who were anxious about significant others acquiring COVID; by contrast there was little overall change in mood (4 better, 5 worse). Notably, in the patients seen on multiple occasions, their functional symptoms followed the course of the pandemic restrictions in Melbourne (initial peak in March, then easing, before a second peak in July).

We sought to replicate this with a simple survey, posted on the patient organisations' websites from 6th of June onwards, asking participants about the change in their FND severity and the change in their anxiety overall during the pandemic. Two hundred and eleven people who identified as having FND responded (mean age 37, 86% female) – see Table 1. The majority (107, 51%) said their FND severity was 'about the same' over the pandemic, but most of the others said they were a little (50, 24%) or much worse (30, 14%). Most reported that their anxiety was worse, either a little (89, 42%) or a lot (41, 19%). The correlation between the change in FND symptoms and change in anxiety was moderately strong (Spearman's rho = 0.58, p<0.001).

Though with inevitable selection bias, these data support the conclusion that established FND has deteriorated only slightly, and in a minority, with the increased anxiety of the pandemic. We cannot draw any clear conclusions about any causal relationship between the two, particularly as most of the data are cross sectional. Anxiety disorders appear to be particularly impacted by the COVID pandemic [3], though from our clinic patients' perspective, this anxiety was not around catching COVID, so much as around the impact of COVID restrictions. In comparison with PTSD, the other classically post-traumatic condition, a study of UK veterans suggests a much stronger relationship between a deterioration in PTSD symptoms and the stress of the pandemic, compared with the possibility of COVID infection [4]. So, the change in FND symptoms of the surveyed patients being worse than our clinic's slight improvement (p<0.001, t-test) may reflect the relatively benign course of the pandemic in Australia, but the lockdown itself was rather stricter in Melbourne than in most countries, so other explanations may be required. In particular, all of our patients were receiving care, whereas for those surveyed this is unknown, so it may be that the pandemic-induced deterioration in FND symptoms was mitigated by specialist care in our clinic.

Table 1
Survey responses to "How do you think your FND severity has changed during the COVID19 pandemic overall?" and "How do you think your level of anxiety changed during the COVID19 pandemic overall?". Percentages are rounded to the nearest whole number.

N=211	FND severity	Level of anxiety
Much worse	30 (14%)	41 (19%)
A little worse	50 (24%)	89 (42%)
About the same	107 (51%)	71 (34%)
A little better	19 (9%)	9 (4%)
Much better	5 (2%)	1 (0%)

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Declaration of Competing Interest

None.

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