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SHORT COMMUNICATION

Low prevalence of SARS-CoV-2 among patients presenting at a Parisian psychiatry University Hospital Group

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Abstract We examine the prevalence of SARS-CoV-2 infections among patients admitted to a Parisian psychiatric University Hospital Group (GHU).

A total of 548 patients were admitted to the GHU's full-time psychiatric wards between April 6 and May 3 2020. More than 80% were tested. A total of 7 patients tested positive for the SARS-Cov-2 (1.3%), with 5 patients (in 92, 5.4%) testing positive in the first week.

GHU patients presented a low prevalence of SARS-CoV-2, even if all patients live in the hardest hit region in France. Social isolation and loneliness, as well as self-isolation of patients with symptoms could explain our results.
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The coronavirus disease 2019 (Covid-19) pandemic, caused by infection from the coronavirus SARS-CoV-2, has recently become a global public health emergency affecting around 24.5 million people and killing at least 830,000 worldwide as of 28 August 2020.[1] In France, the first Covid-19 cases emerged late January 2020 and movement-restricting measures to limit the contagion came into effect around mid-March. The Parisian region (Ile-de-France) has been the most heavily affected, with around 40% of all covid-19 fatalities up to early May, occurring in this region.[2]

Clinical manifestations of Covid-19 are heterogeneous. Around one in five infected individuals is reported to be asymptomatic, while most people with Covid-19 present mild to moderate symptoms,[3] with a significant number of those going undetected. However, according to the European Centre for Disease Prevention and Control (ECDPC) around one third of the diagnosed cases requires hospitalization.[4]

Factors associated with poorer clinical outcomes and mortality among Covid-19 patients include older age, male
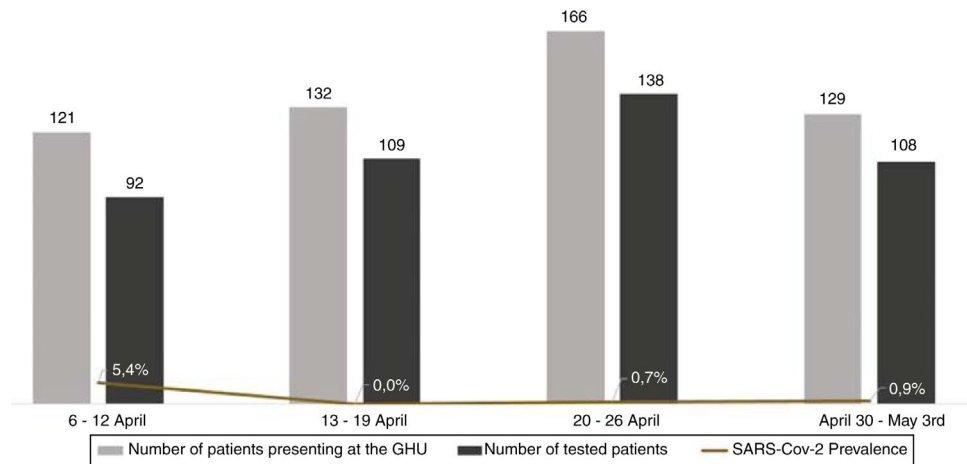
Figure 1 Prevalence of SARS-CoV-2 among patients presenting at the GHU during the Covid-19 pandemic.

Table 1 Sex, age distribution and psychiatric diagnosis according to testing status among inpatients at the GHU. n = 447.

Variable		SARS-Cov-2 test result		
	Positive	Negative	p	
Sex	Women (n (%))	4 (57.1%)	219 (49.8%)	0.699
Age (mean (sd))		47.0 (15)	42.3 (17)	0.771
Psychiatric	Mood disorders	2 (28.6)	141(32.1)	0.930*
Diagnosis	Psychotic disorders	5 (71.4)	217 (49.3)	
	Anxiety and stress-related disorders	0 (0.0)	22 (5.0)	
	Addictive behaviors	0 (0.0)	17 (3.86)	
	Personality disorders	0 (0.0)	17 (3.86)	
	Other	0 (0.0)	26 (5.9)	

* Fischer exact test.

sex, and comorbidities such as obesity, cardiovascular and pulmonary illness.[5]

Generally, individuals with psychiatric disorders are at increased risk for such comorbidities,[6] and therefore they could be more at risk of having poorer Covid-19 outcomes such as invasive mechanical ventilation, as well as an increased mortality risk.

However, there are very few data on SAR-Cov-2 prevalence among psychiatric patients. Moreover, psychiatric wards and hospitals are usually not designed to accommodate patients with respiratory and highly contagious illness, while, the pandemic has also affected the provision and organization of psychiatric care.[7,8] This makes the Covid-19 pandemic especially perilous in psychiatric settings, justifying strict preventive and confinement measures. In this paper, we examine the prevalence of SARS-CoV-2 infections among a sample of patients presenting to the Parisian University Hospital Group of Psychiatry and Neurosciences (GHU).

Methods

As part of the Parisian GHU Covid-19 outbreak response, patients presenting to its different full-time psychiatric wards are screened for SARS-CoV-2. This testing is carried out with nasopharyngeal swabs and a quantitative polymerase-chain-reaction (PCR) test to detect SARS-CoV-2 by a mobile team of nurses.

All medical records at the GHU include a mandatory ''not opposed to the use of data'' question. The data used in this analysis consist of medical records without opposition to data collection.

The mean age, sex ratio and psychiatric diagnosis of patients admitted between April 6 and May 3 2020 were compared according to the SARS-CoV-2 screening status. We also present the prevalence estimate of SARS-CoV-2 infection (number of patients tested positive/number of tested patients) on a weekly basis.

A total of 548 patients were admitted to the GHU's full-time psychiatric wards between April 6 and May 3 2020. More than 80% were tested (n = 447). There was no statistical difference in sex, age and diagnosis between tested and untested patients. Main reasons for not testing were patient's clinical manifestation such as a state of acute agitation, as well as organizational difficulties.

Results

Among the 447 tested patients, 7 patients tested positive for the SARS-Cov-2 (1.3%). In the first week of testing, 6

in 92 (5.4%) patients tested positive for SARS-CoV-2 (Fig. 1). This prevalence decreased drastically in the next weeks with only one patient testing positively in the next three weeks (Fig. 1). The 4 weeks prevalence was 1.6% (7/447).

Among the 7 patients who tested positive, 4 (57%) were female, the mean age of all participants was 42.3 (sd = 16) (Table 1). Psychiatric diagnosis did not differ according to the SARS-COV-2 status.

Discussion

GHU patients presented a low prevalence of SARS-CoV-2, even if all patients live in the Parisian region, where incidence among the general population was around 10% in the same period, the highest in France.[2]

Social isolation and loneliness are generally more prevalent among adults with mental illness,[9] who are also less likely to be employed compared to the general population.[10] Therefore, they are less likely to be exposed to the coronavirus, which would explain the low prevalence in our data. The decrease in the prevalence rate is possibly the direct result of lockdown measures implemented by the French government in mid-march 2020.

It is also likely that infected individuals with symptoms chose to self-isolate, or were admitted to a general hospital for treatment. Some psychotropic treatments have been linked with a lower prevalence of SAR-Cov-2 infection,[11] which could partly explain our results.

Moreover, the true prevalence may be underreported due to false negative results of tests to detect SARS-CoV-2.[12] Further, we only have prevalence data, it is possible that the incidence of the coronavirus is much higher, and patients have already had the Covid-19. Lastly, not all admitted patients were tested, therefore our results should be interpreted with caution.

Screening patients presenting at a psychiatric hospital service could provide a better care for infected patients, and protection for personnel and other patients. Our results provide tentative evidence that psychiatric patients are not at a higher risk of contracting SARS-CoV-2 compared to the general population, however more data is needed on this subject.

Ethical considerations

All routine care medical records at the GHU include a mandatory ''not opposed to the use of data'' question. The data used in this analysis consist of medical records without opposition to data collection. No approval from an ethics committee was required.

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Conflict of interest

The authors have no conflict of interest to declare.

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