The impact of COVID-19 quarantine on mental health: an observational study from an outpatient service for non-psychotic patients in Russia (Moscow)

Mikhail Zinchuk,[1] Massimiliano Beghi,[2] Giulio Castelpietra,[3,4] Silvia Ferrari,[5,6] Evgenii Pashnin,[1] Alla Guekht[1,7]

[1]Moscow Research and Clinical Center for Neuropsychiatry, Moscow, Russian Federation; [2]Department of Mental and Addictions Health, AUSL Romagna, Cesena, Italy; [3]Outpatient and Inpatient Care Service, Central Health Directorate, Region Friuli Venezia Giulia (FVG), Trieste, Italy; [4]Clinical Department of Medical and Surgical Sciences, University of Trieste, Trieste, Italy; [5]Department of Biomedical, Metabolic and Neural Sciences, University of Modena & Reggio Emilia, Italy; [6]Department of Mental Health and Addictions, AUSL IRCCS Reggio Emilia, Reggio Emilia, Italy; [7]Department of Neurology, Neurosurgery and Medical Genetics, Pirogov Russian National Research, Medical University, Russian Federation

Correspondence: Mikhail Zinchuk, Donskayast., 43, 115419 Moscow, Russian Federation.
Tel.: +7.9169367606. E-mail: mzinchuk@mail.ru

Key words: lockdown; pandemic; psychiatric; non-psychotic mental disorders; telemedicine.

Contributions: MZ, conceptualization, investigation, data curation, resources, visualization, manuscript drafting and reviewing; MB, conceptualization, investigation, data curation, resources, visualization, manuscript drafting; GC, formal analysis, software, data curation, methodology; SF, investigation, resources, formal analysis, software, contribution to manuscript drafting; EP, investigation manuscript drafting and reviewing; AG, methodology, project administration, manuscript reviewing.

Conflict of interest: the authors declare no conflict of interest.

Ethics approval and consent to participate: the Ethics Committee of the Moscow Research and Clinical Centre for Neuropsychiatry approved this study (45). The study is conformed with the Helsinki Declaration of 1964, as revised in 2013, concerning human and animal rights.

Informed consent: all patients participating in this study signed a written informed consent form for participating in this study.

Patient consent for publication: written informed consent was obtained from a legally authorized representative(s) for anonymized patient information to be published in this article.

Availability of data and materials: all data generated or analyzed during this study are included in this published article.

Funding: this study was performed as part of the Moscow Research and Clinical Center for Neuropsychiatry research program. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Acknowledgements: the authors are grateful to Dr Georgii Kustov and Andrey Razmakhnin for data collection assistance and to Drs. Nadezhda Voinova and Sofia Popova technical assistance in the preparation of the manuscript.

Received for publication: 6 November 2022.
Accepted for publication: 21 March 2023.

Licensee PAGEPress, Italy
Emergency Care Journal 2023; 19:10994
doi:10.4081/ecj.2023.10994

Abstract

We aimed to compare psychiatric hospital visits during the COVID-19 quarantine period with the same period in 2019, to reveal the predictors of underutilization of mental health services. We then investigated the fluctuation of telemedicine service during the quarantine period. The retrospective study included patients with non-psychotic mental disorders who consecutively visited the Moscow clinic. The number of outpatient visits, inpatient admissions, sociodemographic factors were analyzed. We assessed the sample within two periods - the "quarantine period" (March 30 - June 9, 2020) and "control period" (March 30 - June 9, 2019). Psychiatric visits decreased in older, retired and disabled persons, and increased among the unemployed. In multivariate analysis, the reduction became significant for the number of inpatient admissions. Telemedicine calls gradually increased from the start of the service, but decreased towards the end of the quarantine. In conclusion, referrals to outpatient and inpatient psychiatric services decreased during the quarantine period, with newly established TMS potentially compensating for that decrease. The strongest factor associated with visits during the pandemic is employment status.

Introduction

The first case of COVID-19 infection in Moscow was confirmed on March 2, 2020. In order to prevent the dramatic spread of the disease, between March 30 and May 13, the Government imposed a regimen of "non-working days" in most Russian regions – resembling lockdowns in other countries. In the Moscow area, the "non-working days" period lasted six weeks (until June 9). During this period, all residents were obliged to have a pass (retrievable online) to go out more than 100 meters from their homes in order to minimize contacts. Similar to what happened almost everywhere in the world, all non-essential shops, theatres, cafes and restaurants, public parks and recreational zones, fitness centres and swimming pools, were temporarily closed. Elementary school students were sent to unscheduled vacations until the fall, and university and high school students were transferred to distance learning. Since June 2020, people were allowed to walk in the parks (3 times a week according to a schedule).

A number of studies have reported an increase in anxiety, mood and stress-related disorders and also in suicide attempts across the population during the pandemic period.[1–3] Telephone surveys in people with a history of mental disorder have shown an exacerbation of disorders.[4] This is consistent with the data on the surge in search

queries for psychological support, and anxiolytic consumption during the pandemic.[5]

Some factors during the quarantine were identified as the most stressful, such as quarantine duration >10 days, fear of getting the infection, worry, and frustration for not doing daily-life activities.[6]

However, recent reports examining the impact of the COVID-19 quarantine found a decrease in psychiatric ER visits,[3,7–12] psychiatric ward admissions,[2,13,14] and psychiatric outpatient visits.[15–17] The greatest decrease in the number of new outpatient visits in 2020 was among the youngest and oldest patients.[16] However, data for the Russian population are missing.

Moreover, the spread of the pandemic had a strong impact on mental health services'organization.[18] In particular, the massive implementation of a telemedicine service (TMS) approach, which was less than two per 1,000 between 2005 and 2017[19]in different psychiatric centres around the world, started with the pandemic onset,[20- 23] albeit the prospects of a more active use of TMS in psychiatry had been discussed for a long time before.[22,24] The rise of TMS was mainly due to the need of reducing the number of face-to-face contacts in order to prevent the spread of infection. Nonetheless, we found only few studies reporting epidemiologic evidence of the use of TMS in a public mental health context.[23–25] Overall, young women aged between 25 and 34 years of age had the highest use of both videoconferencing and telephone.[21]

The aim of our study was to compare the number of psychiatric patients visited the Moscow Research and Clinical Center for Neuropsychiatry during the quarantine («non-working days») and the same period of the 2019; then to compare the sociodemographic and clinical characteristics of both groups.

An additional aim was to study the factors associated with admission to a psychiatric inpatient ward, since hospitalization is a direct consequence of the severity of the patient's clinical condition, and underutilization in this group is fraught with more severe consequences compared to the entire sample.

We also looked at the fluctuation in telemedicine calls (incoming and outgoing) during the quarantine period to assess its potential compensatory role in providing psychiatric healthcare during the lockdown.

Materials and Methods

Population

The study retrospectively included non-psychotic adult patients without drug and alcohol use disorders who were longitudinally admitted to the Moscow Research and Clinical Center for Neuropsychiatry for psychiatric evaluation and treatment. The recruitment center has a catchment area of 12,538,000 inhabitants (86.7% adults).

All Moscow residents can request psychiatric assistance at the centre. Most patients arrive on their own; a small proportion of patients were referred by a general practitioner or other physicians. All data were retrieved from the centre's electronic database, and included: sociodemographic variables (age, gender, occupational status, presence of chronic comorbidities, psychiatric diagnosis at discharge, based on ICD-10 classification); and actions taken by the caring psychiatrist (hospitalization in a psychiatric ward, other). We assessed the occupational status of the participants to further divide them into four groups: currently employed, unemployed, retired and economically inactive. The latter group consisted of those who were neither employed nor actively seeking employment.

Patients, already known to have schizophrenia and related disorders, and drug and alcohol and use disorders, were excluded, because they were referred to different services.

To mitigate the underutilization of mental health services during the quarantine, a TMS was created at the Research and Clinical Center for Neuropsychiatry in order to provide counseling and active contact with patients who had previously been prescribed a treatment. The TMS started at the beginning of the pandemic and consisted of about 20 doctors - psychiatrists and psychotherapists – and operated as a remote outpatient service with outgoing and incoming calls. It was aimed to help those who were experiencing psychological distress, for a variety of reasons, including theimpact of the pandemic and the lockdown. Outgoing calls were intended to inquire about health status of: i) those had recently been discharged, and ii) those who had not visited the Center for a long time (missed appointments). Incoming calls were mainly from people complaining about their psychological condition. Thephone number was distributed via the Center's website and social media. Moreover, all patients who came to the Center or were discharged from the inpatient ward received a flyer with the phone number. Incoming TMS started on April 15, while the outgoing TMS started one week later.

The study was approved by the local ethics committee. A consent form was not required since all the data were collected using an anonymous unique code to allow statistical elaboration and were managed in aggregate form to avoid identification.

Statistical analysis

Data were provided to the researchers in descriptive and inferential statistics and data concerning the patients' characteristics at visit. The number of visits was entered into a common database and analyzed using SPSS 16.0 software. Descriptive statistics were performed. The sample was divided in two groups: "quarantine period" (March 30 - June 9, 2020) and "control period", which included the same six weeks of 2019. A Poisson distribution was assumed for the total number of visits/patients and for the TMS (outgoing and incoming calls). The total number of visits/patients was compared between periods using a z-test (normal approximation for the Poisson distribution). All data arepresented as numbers and percentages. The association between each variable and the period was tested using the chi-squared test. All variables found to be statistically significant in univariate analyses and with amissing rate <20% were included in a multivariable binary logistic regression model (MV). Results are reported as odds ratios (OR) with 95% confidence intervals (95% CI). The significance level was set at 5%.

Results

During the lockdown, a 25.8% reduction of psychiatric assessments (from 6389 to 4741) was observed compared to the same period in 2019 (p<0.001). This reduction was found in all age groups, with a higher significance in the elderly. A decrease of 43.4% and of 82.1% was observed in the 65-80 and in the >80 age groups, respectively. According to the employment status, psychiatric assessments differed significantly, with a greater decrease among retired (-62.8%) and economically inactive (-43.5%) persons, while an increase of 17.2% was observed among unemployed persons (Table 1). In MV, age 65-80 (OR:1.46; 95% CI: 1.23-1.53), retired (OR: 0.38; 95% CI: 0.33-0.44) and economically inactive status (OR: 0.66; 95% CI: 0.57-0.75) remained correlated with decrease of psychiatric assessments while

unemployed status (OR: 1.46; 95% CI: 1.23-1.53) remained correlated with an increase. A significant difference was also found between psychiatric diagnoses. In particular, there was a significant decrease in visits for organic psychiatric disorders (-43.5%). In contrast to other diagnostic groups, the absolute numbers of personality disorders remained almost the same as in the previous year. However, this result was lost in the MV analysis.

The rates of inpatient admissions during the quarantine period decreased significantly (-67.9%) as well (Table 1).

We compared the sociodemographic and clinical characteristics of patients whose first visit resulted in hospitalization. Factors significantly associated with hospitalization after a visit to the Center in 2019 were: an increasing age, the diagnosis of "organic disorder", an "economically inactive" status and the absence of "unemployed" status (Table 2). The MV confirmed this results: compared to people with anxiety disorders, patients with psychorganic disorder were significantly associated with inpatient admission (OR 1.49; 95% CI: 1.29-1.72); similarly compared to people aged 46-64, age classes 18-30 (OR 0.69; 95% CI: 0.58-0.81) and 31-45 (OR 0.72; 95% CI: 0.62-0.84) were associated to no admission, while age classes 65-80 (OR 1.40; 95% CI: 1.20-1.63) and >80 (OR 1.83; 95% CI: 1.37-2.44) were associated with admission, while the working status lost its significance. In 2020, only the absence of unemployment and male sex were significantly associated with hospitalization (Table 3). The MV confirmed these results: compared to employed patients, unemployed were at lower risk of psychiatric word admission (OR 0.60; CI: 0.50-0.71); similarly, male patients were at lower risk of psychiatric word admission (OR 0.70; CI: 0.60-0.83). A gradual increase with a peak and further stabilization was observed for both incoming and outgoing calls. When comparing each week with the previous one, significant increases were observed in the week from April 22 to April 28 ($p<0.001$) and then in the two weeks from May 13 to May 26 ($p<0.05$) for incoming calls (Table 3, Figure 1). Outgoing calls increased significantly ($p<0.001$) in the three weeks from April 15 to May 12 (Table 4, Figure 1).

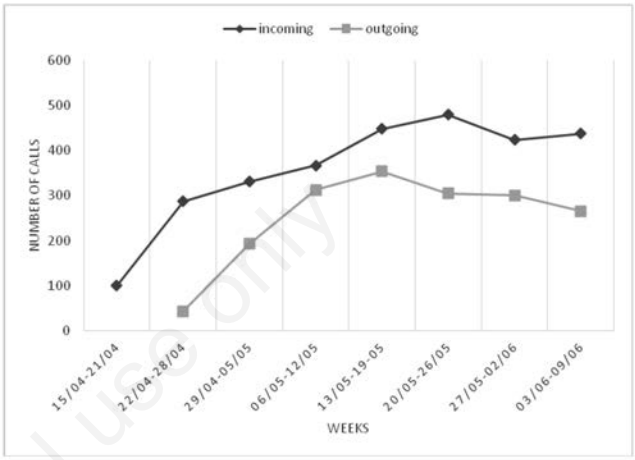

Figure 1. Number of incoming and outgoing Telehealth service calls during the lockdown period.

Table 1. Characteristics of patients who visited the Centre during the lockdown and control periods.

Variable	Control period (March 29th - June 9th 2019) N	%	Lockdown period (March 29th - June 9tth 2020) N	%	p
Age range (years)					p<0.001
18-30	975	15.3	783	16.5	
31-45	1426	22.3	1221	25.8	
46-64	2306	36.1	1833	38.7	
65-80	1430	22.4	810	17.1	
>80	252	3.9	94	2.0	
Gender					p=0.851
Male	1511	23.7	1114	23.5	
Female	4878	76.3	3627	76.5	
Occupation					p<0.001
Currently employed	1661	26.0	1368	28.9	
Economically inactive	1564	24.4	884	18.6	
Retired	1525	23.9	568	12.0	
Unemployed	1639	25.7	1921	40.5	
Psychiatric diagnosis					p<0.001
Psycho-organic disorder	2435	38.1	1375	29.0	
Mood disorder	940	14.7	816	17.2	
Anxiety disorder	2823	44.2	2377	50.1	
Personality disorder	160	2.5	158	3.3	
Eating disorder	30	0.5	15	0.3	
Inpatient admission					p<0.001
No	3469	54.3	3804	80.2	
Yes	2920	45.7	937	19.8	
Total	6389		4741		

Table 2. Variables associated with an admission to the psychiatric ward in control period.

Variable	Non-admitted		Admitted		p
	N	%	N	%	
Age range (years)					p<0.001
18-30	624	18.0	351	12.0	
31-45	885	25.5	541	18.5	
46-64	1251	36.1	1055	36.1	
65-80	623	18.0	807	27.6	
>80	86	2.5	166	5.7	
Gender					p=0.813
Male	816	23.5	695	23.8	
Female	2653	76.5	2225	76.2	
Occupation					p<0.000
Currently employed	934	26.9	727	24.9	
Economically inactive	742	21.4	822	28.2	
Retired	811	23.4	714	24.5	
Unemployed	982	28.3	657	22.5	
Psychiatric diagnosis					p<0.000
Psycho-organic disorder	1080	31.1	1355	46.4	
Mood disorder	556	16.0	384	13.2	
Anxiety disorder	1705	49.2	1118	38.3	
Personality disorder	110	3.2	50	1.7	
Eating disorder	17	0.5	13	0.4	

Table 3. Variables associated with an admission to the psychiatric ward in lockdown period.

Variable	Non-admitted		Admitted		p
	N	%	N	%	
Age range (years)					p<0.447
18-30	627	16.5	156	16.6	
31-45	997	26.2	224	23.9	
46-64	1449	38.1	384	41.0	
65-80	653	17.2	157	16.8	
>80	78	2.1	16	1.7	
Gender					p=0.000
Male	846	22.2	268	28.6	
Female	2958	78.8	669	71.4	
Occupation					p=0.000
Currently employed	1060	27.9	308	32.9	
Economically inactive	667	17.5	217	23.2	
Retired	438	11.5	130	12.0	
Psychiatric diagnosis					p<0.058
Psycho-organic disorder	1071	28.2	304	32.4	
Mood disorder	672	17.7	144	15.4	
Anxiety disorder	1920	50.5	457	48.8	
Personality disorder	127	3.3	31	3.3	
Eating disorder	14	0.4	1	0.1	

Table 4. Outgoing calls: all periods *vs* previous period.

Previous period	N° of calls	Referringperiod	N° of calls	Variation %	p
22/04-28/04	43	29/04-05/05	193	+348	0.0000
29/04-05/05	193	06/05-12/05	313	+62	0.0000
06/05-12/05	313	13/05-19/05	354	+13	0.1124
13/05-19/05	354	20/05-26/05	305	-14	0.0563
20/05-26/05	305	27/05-02/06	300	-2	0.8389
27/05-02/06	300	03/06-09/06	265	-12	0.1409

Discussion

The aim of the present study was to measure changes in the number of patients visited the Moscow Research and Clinical Center for Neuropsychiatry during the COVID-19 quarantine, and their characteristics. In line with other studies[3,7-19], we found a significant reduction in the number of psychiatric evaluations. This may be explained by the established restrictions, as in the definition of the lockdown regime, and by the fear of being infected; although seeking medical help was not restricted.

According to the literature, the maximum reduction in the psychiatric help utilization was observed in the group of patients with non-psychotic mental disorders, while this seldom applied to acute psychotic disorders.[7,8,26,27] This is also confirmed by the stable number of involuntary admissions to psychiatric wards during the pandemic.[8,11] Since the clinical target of the Research and Clinical Center for Neuropsychiatry in Moscow is non-psychotic mental disorders, this may explain the significantreduction in the frequency of admissions to the inpatient department compared to other centres. More generally, the fear of infection itself could be another reason for the decrease in admissions and visits, since hospitals were by far the places at highest risk of contact. This could also justify the greater decrease in visits observed among the elderly, who were clearly identified as the most vulnerable group in terms of the health challenges posed by Sars-Cov-2 infection, and who were consequently targeted by strong educational campaigns.[7,8] Another possible reason for the decrease in visits could be an increased tolerance to the psychiatric symptoms during the pandemic, both among inpatients and family members.[8] Finally, the decrease in the availability of street drugs during the lockdown period could account for the reduction in psychiatric visits, especially in the younger group.[28,29]

Interestingly, the unemployed persons were the only group to show an increased rate of visits compared to the control period. On the one hand, this finding is in the line with multiple reports from different countries of increased level of unemployment during the pandemic. On the other hand, those who were seeking for job before the lockdown faced even more struggle becoming employed due to overall reduction in vacancies. The economic burden during the lockdown could have had a greater impact on this group, leading to or exacerbating mood and anxiety symptoms. A large study conducted in northern Italy during the economic crisis[3032] found that the subjects who lost their permanent jobs were 17% more likely to receive one or more psychotropic drug prescriptions than the controls. This is also supported by the results of pre-pandemic studies, which showed that revealed a lower risk of psychiatric hospitalization among the employed[14]. During self-isolation, most specialists continued to work remotely, which allowed them to maintain income levels close to pre-pandemic levels.

The lower use of mental health services by retirees and the economically inactive reflects a small change in their economic status during the quarantine period.

The greatest decrease in visits was observed among persons with organic non-psychotic disorders. This diagnostic category is intertwined with the age variable, because of its predominance in the older age group. In contrast, the number of visits for personality disorders remained stable in 2019 and 2020, in line with previous research.[31] Our data support the hypothesis that individuals with personality disorders may be less adherent to the prescribed sanitation measures[32]. In this regard, patients with personality disorders may require additional special interventions, which should be considered when developing vaccination programs.

The decrease in visits to the Center may have led to a reduction in psychiatric hospital admissions, as has been found in other countries.[33] Nonetheless, the creation and the rapid development of TMS may also have played a role in the decrease in visits, or at least compensated this decrease – especially at the beginning of the lockdown period, when the number of TMS increased steadily (Figure 1 and Table 4). For example, an Australian study found a reduction of more than 50% in face-to-face visit to a mental care setting following the widespread implementation of a telepsychiatry service.[20] In general, the use of TMS for mental health care has proven to be an effective resource-saving strategy, and its use in routine practice after the end of the pandemic has been claimed.[2]

In addition, the experience of rapidly deploying a TMS to overcome the shortage of face-to-face visits can hopefully be used to develop an algorithm for responding to subsequent epidemics. Also, given that people with mental disorders may be among the priority vaccination groups in some countries, active contact with the use of TMS opens additional opportunities for implementing this program in this population.[34]

Considering that during quarantine periods some patients groups are more prone to postpone their visits, TMS services could specifically targetthose patients to fully compensate for the decrease in mental health provision.

Limitations

Our study has both strengths and limitations. This is the first study from the Russian Federation on mental health utilization during the quarantine period. The first limitation is the retrospective design, which may have led to biases in the collection of some variables (data on some variables, such as organic comorbidity, are missing). Second, we lack a follow-up period to evaluate the extent to which visitrates may have varied, considering the rapid sequences of a government's rules and also the economic burden resulting from the persistence of the pandemic. Third, the sample is based on non-psychotic disorders, and is not representative of the entire psychiatric population. Forth, it would be interesting to study the correlation between the fluctuation of incoming and outgoing calls with clinical characteristics of the patients, but we do not have information about the demographic and clinical variables for patients who called or were called. Finally, the study was performed in a limited area; hence, the generalizability of our findings toother countries, and in Russia as well, may be limited.

Conclusions

During the period of self-isolation associated with the COVID-19 pandemic in Moscow, there was a significant decrease in the number of people referred for inpatient psychiatric care in all age groups. A strong factor associated with psychiatric visits during the pandemic is unemployment status. The decrease in the number of psychiatric consultations may be related both to the pandemic and to the organization and active work of TMS.

References

1. Fiorillo A, Sampogna G, Giallonardo V, et al. Effects of the lockdown on the mental health of the general population during the COVID-19 pandemic in Italy: Results from the COMET collaborative network. Eur Psychiatry 2020;63:e87.
2. Berardelli I, Sarubbi S, Rogante E, et al. The impact of the

COVID-19 pandemic on suicide ideation and suicide attempts in a sample of psychiatric inpatients. Psychiatry Res 2021;303:114072.
3. Costanza A, Di Marco S, Burroni M, et al. Meaning in life and demoralization: a mental-health reading perspective of suicidality in the time of COVID-19. Acta Biomed 2020;91:e2020163.
4. Benatti B, Albert U, Maina G, et al. What happened to patients with obsessive compulsive disorder during the COVID-19 pandemic? A multicentre report from tertiary clinics in Northern Italy. Front Psychiatry 2020;11:720.
5. Gualano MR, Lo Moro G, Voglino G, et al. Monitoring the impact of COVID-19 pandemic on mental health: a public health challenge? Reflection on Italian data. Soc Psychiatry Psychiatric Epidemiol 2021;56:165–167.
6. 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.
7. Beghi M, Brandolini R, Casolaro I, et al. Effects of lockdown on emergency room admissions for psychiatric evaluation: an observational study from the AUSL Romagna, Italy. Int J Psychiatry Clin Pract 2021;25:135-9.
8. Ambrosetti J, Macheret L, Folliet A, et al. Psychiatric emergency admissions during and after COVID-19 lockdown: short-term impact and long-term implications on mental health. BMC Psychiatry 2021;21:465.
9. Hoyer C, Ebert A, Szabo K, et al. Decreased utilization of mental health emergency service during the COVID-19 pandemic. Eur Arch Psychiatry Clin Neurosci 2021;271:377-9.
10. Balestrieri M, Rucci P, Amendola D, et al. Emergency psychiatric consultations during and after the COVID-19 lockdown in Italy. A multicentre study. Front Psychiatry 2021;12:697058.
11. Yalçın M, Baş A, Bilici R, et al. Psychiatric emergency visit trends and characteristics in a mental health epicenter in Istanbul during COVID-19 lockdown. Soc Psychiatry Psychiatr Epidemiol 2021;56:2299-310.
12. Pignon B, Gourevitch R, Tebeka S, et al. Dramatic reduction of psychiatric emergency consultations during lockdown linked to COVID-19 in Paris and suburbs. Psychiat Clin Neurosci 2020;74:557-9.
13. Piccinelli MP, Bortolaso P, Wilkinson GD. Rethinking hospital psychiatry in Italy in light of COVID-19 experience. World J Virol 2022;1173-81.
14. Boldrini T, Girardi P, Clerici M, et al. Consequences of the COVID-19 pandemic on admissions to general hospital psychiatric wards in Italy: Reduced psychiatric hospitalizations and increased suicidality. Prog Neuro-Psychopharmacology Biol Psychiatry 2021;110:110304.
15. Castelpietra G, Colli C, Tossut D, et al. The impact of Covid-19 pandemic on community-oriented mental health services: The experience of Friuli Venezia Giulia region, Italy. Heal Policy Technol 2021;10:143-50.
16. Perozziello A, Sousa D, Aubriot B, et al. Use of mental health services in the aftermath of COVID-19 waves: a retrospective study conducted in a French Psychiatric and Neurosciences University Hospital. BMJ Open 2023;13:e064305.
17. Giannouchos TV, Biskupiak J, Moss MJ, et al. Trends in outpatient emergency department visits during the COVID-19 pandemic at a large, urban, academic hospital system. Am J Emerg Med 2021;40:20-6.
18. Moreno C, Wykes T, Galderisi S, et al. How mental health care should change as a consequence of the COVID-19 pandemic. Lancet Psychiat 2020;7:813-24.
19. Barnett ML, Huskamp HA. Telemedicine for Mental Health in the United States: Making Progress, Still a Long Way to Go. Psychiatr Serv 2020;71:197-8.
20. Gentile A, De Berardis D, Tomasetti C, et al. Digital psychiatry in COVID-19 pandemic: An Italian perspective. Psychiatry Res 2020;292:113316.
21. Jayawardana D, Gannon B. Use of telehealth mental health services during the COVID-19 pandemic. Austral Health Rev 2021;45:442-6.
22. Amerio A, Odone A, Marzano L, et al. Covid-19: The last call for telepsychiatry. Acta Biomedica 2020;91:1-2.
23. Rosenberg S, Mendoza J, Tabatabaei-Jafari H, et al. International experiences of the active period of COVID-19 - Mental health care. Heal Policy Technol 2020;9:503-9.
24. Stein HC, Giordano B, del Giudice R, et al. Pre/post comparison study of emergency mental health visits during the COVID-19 lockdown in Lombardy, Italy. Psychiat Clinical Neurosci 2020;74:605-7.
25. Öngür D, Perlis R, Goff D. Psychiatry and COVID-19. JAMA 2020; 324: 1149.
26. D Agostino A, D'Angelo S, Giordano B, et al. Brief Psychotic Disorder During the National Lockdown in Italy: An Emerging Clinical Phenomenon of the COVID-19 Pandemic. Schizophr Bull 2021;47:15-22.
27. Esposito CM, D'Agostino A, Dell Osso B, et al. Impact of the first Covid-19 pandemic wave on first episode psychosis in Milan, Italy. Psychiatry Res 2021;298:113802.
28. Bergeron A, Décary-Hétu D, Giommoni L. Preliminary findings of the impact of COVID-19 on drugs crypto markets. Int J Drug Policy 2020;83:102870.
29. Gili A, Bacci M, Aroni K, et al. Changes in drug use patterns during the covid-19 pandemic in italy: Monitoring a vulnerable group by hair analysis. Int J Environ Res Public Health 2021;18:1-11.
30. Cornaggia CM, Beghi M, Mezzanzanica M, et al. Psychotropic Drug Consumption and Employment Status in Time of Economic Crisis (2007-2011). Psychiatr Q 2017;88:371-84.
31. Yellowlees P, Nakagawa K, Pakyurek M, et al. Rapid conversion of an outpatient psychiatric clinic to a 100% virtual telepsychiatry clinic in response to COVID-19. Psychiatr Serv 2020;71:749-52.
32. Roncero C, García-Ullán L, de la Iglesia-Larrad JI, et al. The response of the mental health network of the Salamanca area to the COVID-19 pandemic: The role of the telemedicine. Psychiatry Res 2020;291:113252.
33. Kinoshita S, Cortright K, Crawford A, et al. Changes in Telepsychiatry Regulations during the COVID-19 Pandemic: 17 Countries and Regions' Approaches to an Evolving Healthcare Landscape. Psychol Med 2022;52:2606-13.
34. De Picker LJ, Yolken R, Benedetti F, et al. Viewpoint | European COVID-19 exit strategy for people with severe mental disorders: Too little, but not yet too late. Brain, Behav Immun 2021;94:15-17.