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Mental health impact six months after the COVID-19 pandemic related lockdown: a monocentric study

Long-term mental health consequences of COVID-19 pandemic related lockdown

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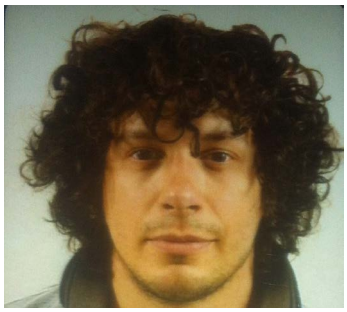

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Summary

Introduction. The COVID-19 pandemic has had a significant impact on the mental health so much that different clinicians and researchers have announced the emergence of "a global mental health crisis". However, the long-term impact of COVID-19 pandemic and of related lockdown measures on mental health has not been systematically evaluated.

Objectives. To compare the characteristics of emergency psychiatric consultations during the six months after lockdown period of 2020 with respect to the corresponding period in 2019 in a psychiatric emergency department located in Lombardy region (Italy).

Methods. We conducted a comparative study including psychiatric consultations of patients consecutively admitted to emergency department of San Gerardo Hospital (Monza, Italy). Sociodemographic data, clinical characteristics, referred symptoms, diagnosis and information on the occurrence of hospitalization following the emergency consultations were collected.

Results. Between May 4th and November 5th 2020, there was a reduction of almost 20% in the number of psychiatric emergency consultations, compared to the same period of 2019. Emergency psychiatric consultations in the post-lockdown period were associated with lower rates of alcohol misuse (aOR = 0.69, p = 0.004) and referred symptoms of mood disorders (aOR = 0.53, p = 0.002), but higher rates of self-harm or suicide attempts (aOR = 1.82, p = 0.000) and anxiety disorders (aOR = 1.55, p = 0.006) with respect to the pre-lockdown phase. Suicidal behaviors and anxiety disorders increased after the COVID-19 lockdown.

Conclusions. The findings of this study suggest that more economic and professional sources should be addressed to the mental health areas, potentially more affected by the prolonged restrictive measures aimed to reduce the spread of pandemic.

Key words: COVID-19, lockdown, suicide behavior, anxiety, mental health services

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Introduction

Increasing evidence demonstrated that the trauma of the 2019 novel coronavirus disease (COVID-19) and the related lockdown measures led to short- and long-term negative effects on mental health. In particular, sleep disorders, anxiety, depression, stress-related disorders and frustration largely emerged because of the worry to be infected, lifestyle changes, increasing work pressure, high social media exposure and worsening of living conditions [1]. Even though a recent meta-analysis reported mild, despite significant, effects of pandemic restrictions on mental health [2], available studies present large method heterogeneity so that the impact of lockdown on different groups, contexts and countries should be further investigated [3]. Of note, individuals from more socially disadvantaged backgrounds, such as people with pre-existing mental conditions, presented worse mental health outcomes [4 5]. Specifically, most observational studies, conducted on patients presenting to the emergency department (ED), showed a worsening of clinical symptoms in subjects affected by personality disorders, obsessive-compulsive disorder, substance use disorder (SUD), and dementia, as well as among people living in residential mental health facilities [6-8]. On the other hand, contrasting results were reported about a possible increase of ED visits during the lockdown period for anxiety, depressive and adjustment disorders, and for suicidal behavior [9]. Indeed, it has been hypothesized that that high levels of depression and anxiety might occur in the early stages of lockdown and might present a rapid decline, possibly due to individuals' ability to adapt to circumstances [10]. Nevertheless, it has been argued that subjects may experience an exacerbation of psychiatric symptoms, but the fear of contamination or restrictions prevented them from presenting to the ED, consistently with previous findings [11].

Whilst it is plausible that COVID-19 and lockdown restriction may have a negative long-term impact on mental health, to the best of our knowledge only few studies were conducted over post-lockdown periods. A large survey, carried out after the beginning of restrictions, found a high prevalence of psychological distress (39%), depression (39%) and anxiety (42%) in the American population [12]. In particular, some variables including age, ethnicity, employment as a healthcare worker, having children at home, annual household income and area of residence were identified as significant predictors of both anxiety and depression. Chen et al. [13], in order to quantify the medium-term impact of lockdown on referrals to secondary care mental health clinical services, described a possible post-lockdown acceleration in emergency mental health referrals, particularly among patients with previous depression, anxiety, SUD and personality disorder. On the other hand, as regards psychiatric presentations in ED after the lockdown period, mixed findings have arisen. A multicentre Italian research of Balestrieri et al. [14], aimed to analyze the psychiatric consultations among nine Italian hospital EDs, by comparing the lockdown and post-lockdown periods of 2020 with the equivalent periods of 2019, found a decrease of psychiatric consultations during and after the lockdown. However, an increase in consultations for manic episodes and suicidality as well as in the number of compulsory admissions after the lockdown has been reported. Ambrosetti et al. [15], by analyzing socio-demographic and clinical information on nearly 1500 psychiatric ED consultations at the University Hospital of Geneva, found that suicidal behavior, behavioral disorders, psychomotor agitation, migrant status, involuntary admission, and private resident discharge were predictors of post-lockdown ED admissions. Moreover, longitudinal data regarding the number of presentations to three acute mental health liaison teams and two acute mental health centers in London (UK) after lockdown (as compared with the period before the lockdown) showed an increase of people presenting with pre-existing diagnoses of serious mental disorders as well of patients admitted to psychiatric inpatient unit, but also a decrease of individuals with previous diagnoses of both anxiety disorders and SUD [16]. In two following Italian monocentric studies, carried out by Brandizzi [17] and Bodini et al. [18] contrasting results have emerged. In the first survey carried out by Brandizzi et al. [17], it has been found that, compared to pre-lockdown, patients were more likely to be men and more often diagnosed with non-severe mental illnesses during the post-lockdown period. On the other hand, the study of Bodini et al. [18] reported that young adults and people with diagnosis of psychosis showed an increase in requests for psychiatric consultation during the post-lockdown period, with respect to the corresponding antecedent period.

In our knowledge, only few studies have been performed in Italy in order to explore the characteristics of emergency psychiatric consultations after the COVID-19 lockdown period and to compare them to the pre-lockdown period. Nevertheless, to date, studies have been found to be heterogeneous and findings to be mixed. On the other hand, because the long-term impact of COVID-19 outbreak and of state-imposed lockdown on mental health have not been systematically evaluated till now, the objective of the present article was to assess the sociodemographic and clinical features of individuals receiving psychiatric consultations during the six months after lockdown period of 2020 in a psychiatric emergency service of Fondazione IRCCS San Gerardo dei Tintori, Monza (Lombardy region) and to compare them to the same period in 2019. We hope that findings of this study might help clinicians to identify subjects more vulnerable to the negative effects of the pandemic on mental health in order to offer more targeted assistance.

Materials and methods

This study was drawn up according to the Strengthening

the Reporting of Observational studies in Epidemiology (STROBE) Statement items [19]. The research project complied with the principles of the Declaration of Helsinki regarding medical research in humans, following research ethical requirements.

Setting and study design

We conducted a comparative study including individuals consecutively admitted to psychiatric emergency service in Monza. Monza hospital covers the health needs of nearly 850.000 inhabitants and offers psychiatric emergency care 24 hours a day. We compared the consultation rates for a period of six months since the Italian government decided to ease COVID-19 lockdown measures with the same period in 2019. Therefore, the period includes from Monday 6th May to Thursday 7th November 2019 (pre-lockdown period) and Monday 4th May to Thursday 5th November 2020 (post-lockdown period). No subjects were excluded from the study.
In total, 1100 ED admission records (604 before pandemic and 496 after lockdown period) were identified (Tab. I).

Table I. Number of emergency psychiatric consultations and characteristics of individuals presenting for emergency psychiatric evaluation during pre and post-lockdown periods: univariate data analysis comparison.

Variables	Pre-lockdown period N = 604	Post-lockdown period N = 496	p-value
Sociodemographic			
Age (years) *mean (SD)*	45.0 (18.1)	45.6 (18.2)	0.627[a]
Female gender	339 (56.1%)	267 (53.8%)	0.446[b]
Non-Italian nationality	91 (15.1%)	89 (17.9%)	0.199[b]
Partner/married*	186 (36.0%)	125 (43.2%)	**0.042**[b]
Unemployed*	354 (70.9%)	210 (68.8%)	0.530[b]
Clinical characteristics			
PRTFs	74 (12.2%)	69 (13.9%)	0.415[b]
Outpatient mental health services*	367 (60.8%)	305 (63.3%)	0.396[b]
Psychotropic medications*	356 (58.9%)	277 (58.7%)	0.933[b]
Alcohol	108 (17.9%)	63 (12.7%)	**0.018**[b]
Cannabis	46 (7.6%)	41 (8.3%)	0.691[b]
Cocaine	53 (8.8%)	43 (8.7%)	0.951[b]
Opioids	9 (1.5%)	7 (1.4%)	1.000[c]
Other substances	18 (3.0%)	12 (2.4%)	0.711[c]
Referred symptoms			
Psychosis	80 (13.2%)	51 (10.3%)	0.131[b]
Depression or mood	107 (17.7%)	43 (8.7%)	**0.000**[b]
Anxiety or panic	171 (28.3%)	146 (29.4%)	0.682[b]
Self-harm or suicide attempt	75 (12.4%)	104 (21.0%)	**0.000**[b]
Psychomotor agitation	82 (13.6%)	85 (17.1%)	0.101[b]
Other	89 (14.7%)	67 (13.5%)	0.562[b]
Diagnosis			
Psychotic disorders	95 (15.7%)	82 (16.5%)	0.718[b]
Bipolar disorder	36 (6.0%)	28 (5.6%)	0.824[b]
Depressive and adjustment disorders	123 (20.4%)	85 (17.1%)	0.174[b]
Personality disorders	132 (21.8%)	84 (16.9%)	**0.041**[b]
Anxiety disorders	100 (16.6%)	123 (24.8%)	**0.001**[b]
OCD	13 (2.1%)	5 (1.0%)	0.158[c]
Substance use disorders	31 (5.1%)	36 (7.3%)	0.164[c]
Intellectual disability	9 (1.5%)	6 (1.2%)	0.797[c]
Non psychiatric disorders	65 (10.8%)	47 (9.5%)	0.686[b]
Hospitalization	214 (35.4%)	180 (36.3%)	0.767[b]

Notes: Pre-lockdown period = Monday 6th May-Thurdsday 7th November 2019; Post-lockdown period = Monday 4 th May- Thursday 5th November 2020
OCD = obsessive compulsive disorder; PRTFs = psychiatric residential treatment facilities; SD = standard deviation
Values are numbers (%), unless stated.
**There are missing values for some variables:the greatest number of missing values is for employment and marital status with 26.9. and 26.7%, respectively.*
a. t test; b. Pearson's χ^2 test; c. Fisher's exact test.
Significant findings appear in bold.

Data collection

The data of the present study were extracted anonymously from the hospital registers. For subjects with multiple admissions, the most recent clinical data were considered. Information included socio-demographic data, housing status (home or psychiatric residential treatment facilities), current use of outpatient mental health services, ongoing psychotropic medications, co-occurring use of addictive substances. Data on SUDs were obtained using ICD-10 codes along with urine drug toxicology when available. The following clinical information were taken into account for each patient: reason of consultation (i.e. type of symptoms), ICD-10 discharge diagnosis and the occurrence of hospitalization after the emergency visit.

Data analysis

Descriptive analyses of included variables were carried out for pre and post-lockdown periods: mean and standard deviation (SD) for quantitative variables, and frequency and percentage for qualitative ones. Then, we conducted univariate analysis in order to detect statistically significant differences between these two periods. The normal distribution of quantitative variables was verified by using Shapiro-Wilk's test. According to this assumption, Student's *t* test was used (adopting the Welch's t test in case of inequality of variances) or, in alternative, non-parametric Wilcoxon-Mann-Whitney test. The qualitative variables were compared by chi-square or Fisher's Exact tests. Subsequently, in order to test with regression analyses some possible associations between the presence of emergency psychiatric visits during the post-lockdown period (as dependent variable) and the collected variables (as independent variables), adjusted for age and gender, we followed a multi-step approach. Initially, five preliminary models were run, including sociodemographic characteristics (Model 1), clinical characteristics (Model 2), referred symptoms (Model 3), diagnosis (Model 4) and hospitalization (Model 5) as predictors. The statistically significant variables from these five models were, therefore, included in a new final model (Model 6). For all regression analyses, adjusted odds ratios (aOR) together with their 95% confidence intervals (CI), were reported. Statistical significance was set at $p < 0.05$. Analysis were conducted using Stata Version 13.1 SE

Results

Table I shows the demographic and clinical characteristics of all emergency psychiatric consultations. The average age of ED patients was 45.0 years (SD: 18.1) and there was a predominance of the female gender (56.1%). Most admissions involved individuals receiving outpatient mental health services (60.8%) and taking some psychotropic medicines (58.9%). Alcohol (17.9%), followed by cocaine (8.8%), was the most commonly type of substance use disorder. Anxiety or panic (28.3%) was the most prevalent reason for seeking treatment at ED whilst, with respect to psychiatric diagnoses, more than 20% of admissions were for personality disorders (21.8%) or depressive/adjustment disorders (20.4%) Finally, more than one-third of individual receiving psychiatric consultation was admitted to a psychiatric ward (Tab. I).

After 6 months of lockdown, a 17.9 percent reduction of emergency psychiatric consultations relative to the corresponding period in 2019 has been found. Apart from marital status, no statistical differences were observed between the two periods with regard to sociodemographic variables. The number of consultations of subjects with alcohol misuse as well as with referred mood symptoms was statistically lower in 2020 than in 2019. On the other hand, self harm or suicidal behaviors were statistically more frequent during the six months after lockdown period than in the previous year. With regard to the diagnosis of discharge from ED, personality disorders were less identified in 2020 than in 2019, differently from anxiety disorders that were more diagnosed during the post-lockdown than in the previous year. The rate of hospitalizations after emergency consultation did not significantly change between the two periods.

The results of logistic regression analyses are summarized in Table II.

Table II. Multivariate logistic regression models for odds of emergency psychiatric evaluation during post-lockdown period.

	Model 1 aOR (95% CI)	p	Model 2 aOR (95% CI)	p	Model 3 aOR (95% CI)	p	Model 4 aOR (95% CI)	p	Model 5 aOR (95% CI)	p	Model 6 aOR (95% CI)	p
Sociodemographic												
Age (years) *mean (SD)*	1.00 (0.99-1.01)	0.813	1.15 (089-1.49)	0.272	1.00 (1.00-1.01)	0.273	1.00 (1.00- 1.01)	0.503	1.00 (1.00-1.01)	0.569	1.00 (1.00-1.01)	0.312
Female gender	0.93 (0.68-1.28)	0.662	1.13 (0.79-1.62)	0.503	1.08 (0.84-1.38)	0.562	1.08 (0.85-1.39)	0.528	1.10 (0.86-1.40)	0.441	1.15 (0.90-1.47)	273
Non-Italian nationality	0.98 (0.62-1.56)	0.935	-	-	-	-	-	-	-	-	-	-
Partner/married*	1.05 (0.74-1.50)	0.768	-	-	-	-	-	-	-	-	-	-

continue

Unemployed*	1.29 (0.91-1.82)	0.148	-	-	-	-	-	-	-	-	-	-
Clinical characteristics	-	-	0.99 (0.67-1.45)	0.945	-	-	-	-	-	-	-	-
PRTFs	-	-	1.12 (0.80-1.58)	0.508	-	-	-	-	-	-	-	-
Outpatient mental health services	-	-	0.94 (0.67-1.31)	0.701	-	-	-	-	-	-	-	-
Psychotropic medications	-	-	0.60 (0.41-0.88)	**0.009**	-	-	-	-	-	-	0.69 (0.48-0.98)	**0.038**
Alcohol	-	-	1.32 (0.80-2.20)	0.278	-	-	-	-	-	-	-	-
Cannabis	-	-	1.10 (0.66-1.84)	0.719	-	-	-	-	-	-	-	-
Cocaine	-	-	0.99 (0.35-2.77)	0.983	-	-	-	-	-	-	-	-
Opioids	-	-	0.97 (0.43-2.17)	0.939	-	-	-	-	-	-	-	-
Other substances	-	-	-	-	0.85 (0.53-1.36)	0.498	-	-	-	-	-	-
Referred symptoms	-	-	-	-	0.53 (0.33-0.86)	**0.010**	-	-	-	-	0.53 (0.36-0.79)	**0.002**
Psychosis	-	-	-	-	1.16 (0.79- 1.71)	0.458	-	-	-	-	-	-
Depression or mood	-	-	-	-	1.88 (1.21-2.90)	**0.005**	-	-	-	-	1.82 (1.30-2.55)	**0.000**
Anxiety or panic	-	-	-	-	1.37 (0.88-2.12)	0.161	-	-	-	-	-	-
Self harm or suicide attempt	-	-	-	-	1.10 (0.71-1.47)	0.531	-	-	-	-	-	-
Psychomotor agitation	-	-	-	-	-	-	1.24 (0.75-2.04)	0.399	-	-	-	-
Other	-	-	-	-	-	-	1.11 (0.59-2.08)	0.750	-	-	-	-
Diagnosis	-	-	-	-	-	-	0.99 (0.62-1.60)	0.976	-	-	-	-
Psychotic disorders	-	-	-	-	-	-	0.94 (0.57-1.57)	0.822	-	-	-	-
Bipolar disorder	-	-	-	-	-	-	1.80 (1.11-2.91)	**0.017**	-	-	1.55 (1.13-2.12)	**0.006**
Depressive and adjustment disorder	-	-	-	-	-	-	0.57 (0.19-1.73)	0.321	-	-	-	-
Personality disorders	-	-	-	-	-	-	1.66 (0.87-3.14)	0.121	-	-	-	-
Anxiety disorders	-	-	-	-	-	-	1.01 (0.33-3.12)	0.985	-	-	-	-
OCD	-	-	-	-	-	-	1.05 (0.70-1.87)	0.510	-	-	-	-
Substance use disorders	-	-	-	-	-	-	-	-	1.04 (0.81-1.33)	0.782	-	-
Intellectual disability												
Non psychiatric disorders												
Hospitalization												

Post-lockdown period = Monday 4 th May- Thursday 5th November 2020
*aOR = adjusted odds ratios and their 95% confidence interval (CI); OCD = obsessive compulsive disorder; PRTFs = psychiatric residential treatment facilities. Significant findings appear in bold. *There are missing values for some variables:the greatest number of missing values is for employment and marital status with 26.9. and 26.7%, respectively.*

After controlling for age and gender, having alcohol misuse (aOR = 0.60, p = 0.009), as well as presenting symptoms of mood disorders (aOR = 0.53, p = 0.010) were associated with less emergency psychiatric visits during the post-lockdown period than the previous year. In contrast, being admitted to ED following self-harm or suicide attempt (aOR = 1.88, p = 0.005) and having a diagnosis of anxiety disorder after discharge (aOR = 1.80, p = 0.017) were significant predictors of having an emergency psychiatric visit during the post-lockdown period. As reported in Table II, the final logistic regression analysis (Model 6) showed that emergency psychiatric consultations in the post-lockdown period (with respect to corresponding period of the previous year) were associated with a lower rate of alcohol misuse (aOR = 0.69, p = 0.038) and of referred mood symptoms (aOR = 0.53, p = 0.002), but with higher rates of self-harm or suicidal behaviour (aOR = 1.82, p = 0.000) and of anxiety disorders (aOR = 1.55, p = 0.006).

Discussion

The present study aimed to analyze the long-term effects of COVID-19 lockdown measures, adopted to mitigate the spread of the SARS-COV2 infection, on psychiatric consultations, considering a sample of subjects who had been assisted in an Italian ED. Similarly to two studies carried out in Italy [14,18], we found that, during the post-lockdown phase, psychiatric ED visits were reduced, compared to the non-lockdown period, even if to a lesser degree as compared to lockdown period [20]. However, some significant differences has been identified with regard to the psychiatric reasons of consultancy in the post-lockdown as compared to the corresponding period of the previous year.

First, individuals with alcohol addiction were less likely to refer to hospital emergency services during the post-lockdown with respect to 2019. There are different studies reporting increased use of alcohol as a coping mechanism for reacting to disaster and pandemic [21]. It was therefore suggested that the effect of social isolation and lockdown due to the COVID-19 containment measures might have worsened stress and anxiety, which, in turn, contribute to the increase in alcohol misuse [22]. On the other hand, the disruption of daily routines, as the result of social distancing and lockdown restrictions, may have led to reduced drinking habits, making it easier to change this behavior [23]. Indeed, it is well known that, when people practice action, they develop relationships in memory between the action and aspects of the environment in which it typically occurs. Therefore, with sufficient repetition in stable contexts, behavior comes to be interconnected in memory with recurring aspects of the performance situation. However, changes in important issues of the context can decrease the likelihood of automatically activating the practiced exerted behavioral response [24,25]. However, mixed findings emerged on how the pandemic might have affected alcohol consumption [26-28]. Particularly, some factors including mid age, high income, unemployment, comorbid sleep disorders and depression, and past heavy drinking were reported as all factors associated with an increased risk of alcohol misuse during the COVID-19 pandemic [29]. According to our findings, we could hypothesize that, albeit alcohol use may represent a dysfunctional coping strategy in the short-term, most people were more likely to reduce their drinking behaviors in the long-term, as a consequence of being less lonely and socially isolated during post-lockdown compared to lockdown period [26]. In support of our hypothesis, a recent study reported that high-risk drinkers might be more prone to reduce their alcohol consumption during the pandemic with respect to the period before lockdown [27].

Despite patients with referred mood symptoms resulted to be less frequently visited in the ED during the post-lockdown period, we also found that suicidal and self-harm presentations to ED were significantly associated with higher rates of psychiatric emergency consultation during the six months after lockdown compared to 2019. Despite the long-term effects of pandemic on mood of individuals are less known, it has been suggested an increase in manic symptomatology from pre-COVID-19 into the initial phases of the pandemic in BD patients. Subsequently, these symptoms may decrease along with fear of COVID-19 and positive coping during the following months when lockdown measures were eased [30]. As concerns depressive symptoms, although cross-sectional studies have suggested an increase at the start of the pandemic [31], results from prospective, repeated measures, studies showed a decrease in the subsequent weeks of both lockdown [10] and post-lockdown periods [30,32] compared to pre-pandemic measures. Regarding self-harm and suicide attempts, a recent systematic review failed to find a potential relationship between COVID-19 or other respiratory pandemics and suicidal behaviors [33]. However, a major limitation of this topic is the high heterogeneity of the available studies. Indeed, since the onset of COVID-19 pandemic, most literature concerning self-harm or suicide attempts consists of case reports or case series, which prevent to an in-depth understanding of this problem [34]. Nevertheless, a study conducted on the entire Japanese population including more than 120 million people showed that suicide deaths substantially declined during the first wave of the COVID-19 pandemic (February to June 2020), but rapidly increased during the second outbreak (July to October 2020) [35,36]. Moreover, Balestrieri et al. [14] reported a decrease in consultations for suicidal ideation and planning during the lockdown, followed by growing rebound after the lockdown, together with an increase in consultations for suicidal behavior. Some authors argued that social factors, changing in the course of the pandemic, such as quality of work or access to schools may influence the risk to have suicidal behaviors [37]. Social isolation, loneliness, uncertainty, stigma, fear of economic crisis, together with clinical/biological risk factors (family history of suicide, temperament, substance use or mental

disorders) and psychosocial aspects (advanced aged, low socioeconomic classes, unemployment, migration, homeless) are supposed to have a relevant impact in increasing self-harm behaviors [38-40]. For all these reasons no definitive conclusions can be drawn with regard to the impact of COVID-19 on suicidal behaviors [41].

Finally, patients with anxiety disorders more frequently sought help in the ED during the post-lockdown period than in the corresponding period of the previous year. This is not surprising as individuals with anxiety symptoms can be extremely worried about contagion during a pandemic [42,43]. In this regard, a latest meta-analysis reported a prevalence of 25% of anxiety disorders among the general population during the COVID-19 outbreak (more than 3 times higher than in other periods) [44]. In the same way, the long and undetermined period of restrictions imposed by the government could contribute to increased rates of anxiety, consistently with the negative psychological effects of social isolation and limitations experienced during outbreaks [45]. It is noteworthy that some longitudinal studies showed a significant acceleration in emergency visits for anxiety in the months following national lockdowns [13]. Conversely, we cannot entirely exclude that the rise of emergency visits for anxiety may also represent a rebound of the request of support by the healthcare system from the initial acute decrease during the lockdown [6]. However, we have to take into account that lower rates of alcohol addiction observed after lockdown may act as a confounder as anxiety symptoms may occur after stopping or reducing alcohol use. Particularly, individuals with anxiety disorders tend to drink more than usual during the lockdown period, probably in an effort to take control over their anxiety issue [26]. Consequently, reducing alcohol consumption may lead to increased anxiety after lockdown as a consequence of both withdrawal symptoms and exacerbations of underlying anxiety disorder [46].

Of note, the univariate analyses of our data showed that patients suffering from personality disorders sought emergency psychiatric care less frequently during the post-lockdown as compared with the previous year. Even though these patients may be vulnerable to the negative effects of COVID-19 pandemic, they might benefit more than others from the easing of social restrictions [47]. On the other hand, more engaged or married patients presented for emergency psychiatric evaluation during post-lockdown in comparison to 2019 and this aspect may reflect the elevated levels of tension and conflict experienced by families during the lockdown [48].

Our study has some limitations. First, we used clinical data up to six months after lockdown. The collected data cover therefore only a part of the post-lockdown and it is likely that this period might not be long enough to make manifest other potential negative effects of the lockdown. It should be also specified that this period correspond to the phase of minor social restrictions in Italy just before the second wave of COVID-19. Second, the results of our study may not always be accurate. Indeed, the diagnoses of mental disorders were made by different psychiatrists and some of the included data were self-reported by patients such as substance misuse. In addition, it was not possible to have accurate information about the severity of substance abuse, psychiatric comorbidity and duration of treatment with psychotropic compounds. Third, our findings regard patients afferent to ED and therefore they may underestimate mild psychiatric symptoms. Fourth, we have not checked for possible COVID-19 survivors. It should be noted that subjects with severe infection suffered more from sleep disturbance, post-traumatic stress disorder, and cognitive deficits. Furthermore, survivors with mild infection may have high burden of anxiety and memory impairment after recovery. In general, after recovery from acute COVID-19, half of survivors still have an important burden of either physical or mental sequelae up to at least 12 months [49]. Finally, our study was conducted in a single psychiatric ED and this limits the generalization of our results for the differences in health management and impact of COVID-19 among the various countries or regions [42].

Conclusions

Despite some limitations, the present study shows a reduction in the frequency of visits in the ED for psychiatric symptoms in the six months after lockdown as compared with the corresponding period of 2019. Particularly, individuals admitted to ED for self-harm or suicide attempt and suffering from anxiety disorders were more likely to present to psychiatric emergency services during the post-lockdown, as compared with 2019. However, emergency psychiatric consultations in the post-lockdown period consisted of lower rates of patients who reported alcohol addiction and mood symptoms. These findings, together with the available literature, may provide valuable implications for any future wave of this disease or other pandemic. Accordingly, some patients may require specific support during both lockdown and post-lockdown period in order to protect their psychological health and prevent increased suicide rates [50]. Although further studies are needed to confirm the present findings, the authorities should support the use of e-health technologies to enhance coping strategies and resilience among individuals at high-risk for suicidal behaviors or anxiety disorders [51,52].

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