Effects after the lockdown on emergency room admissions for psychiatric evaluation: An observational study from the province of Forlì-Cesena, Italy

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Abstract

The aim was to study the number of accesses to the Emergency Room (ER) requiring psychiatric evaluation in the four months following the lockdown period for the COVID-19 outbreak (May 4th, 2020-August 31st, 2020). The study is a retrospective longitudinal observational study of the ER admissions of the Hospitals of Cesena and Forlì (Emilia Romagna region) leading to psychiatric assessment. Sociodemographic variables, history for medical comorbidities or psychiatric disorders, reason for ER admission, psychiatric diagnosis at discharge and measures taken by the psychiatrist were collected. An increase of 9.4% of psychiatric assessments was observed. The difference was more pronounced in the first two months after lockdown, with a 21.7% increase of number of ER accesses, while after two months numbers were the same as those of the year before. Admission with anxiety symptoms and history of psychiatric disorder decreased significantly. Moreover, there is an age trend with an increasing age of admission.

Introduction

Between March 9th and May 3rd, 2020, the Italian Government imposed a national lockdown, restricting the movements of the population except for certified needs such as work and health circumstances, the temporary closure of non-essential services, productive activities and businesses, in response to the growing pandemic of COVID-19 in the country. After this phase, the Italian Government decided to ease the lockdown restricting measures, and people who had been at home during the lockdown returned to their workplaces and were also allowed to visit relatives and other loved ones.

The WHO declared the novel COVID-19 disease a pandemic, with severe consequences for health and global economic activity and Italy is one of the hardest hit countries.1 A recent systematic review of the literature2 has underlined the negative psychological effects of quarantine, such as the development of Post-Traumatic Stress Disorder (PTSD) symptoms, like confusion and anger. Stressful factors during quarantine were identified, including quarantine length >10 days, fear to contract the infection, boredom and frustration for not doing daily-life activities, lack of basic elements of food, water, clothes, that could be extended to the following months.3

After lockdown, the financial loss as a result of lockdown created serious socioeconomic distress and was found to be the main risk factor for symptoms of psychological disorders and both anger and anxiety several months after lockdown.2 Access to the Emergency Room (ER) is considered an index of severe psychiatric distress, since it underlines a compelling request due to patient’s discomfort. Recent reports from Italy, France, Germany, and Portugal, found a decrease of psychiatric ER visits4 during the lockdown.

However, data on psychiatric distress after the lockdown are still scarce. Data from the United Kingdom5 show a longer-term urgent or emergency mental health referrals acceleration after an instantaneous drop at the beginning of the lockdown.
The aim of our study was to compare the number of accesses to the ER requiring psychiatric evaluation in the province of Forlì-Cesena in the region Emilia-Romagna, North-Eastern Italy, in the four months following the “phase one” of the restrictions for the COVID-19 outbreak (from May 4th, 2020 to August 31st, 2020) with those of the same period of the year 2019, and also to investigate the socio-demographic and clinical characteristics of patients admitted.

Materials and Methods

The study is a retrospective longitudinal observational study of the ER admissions of the Hospitals of Cesena and Forlì leading to psychiatric assessment. The catchment area included 333,112 adult inhabitants, distributed as follows: Cesena, 176,232; Forlì, 156,884.

Measures

The electronic databases were searched for of following data: sociodemographic variables (age, gender, ethnicity, marital status, housing status), positive history for medical comorbidities or psychiatric disorders, reason for ER admission, psychiatric diagnosis at discharge and measures taken by the caring psychiatrist (hospitalization in psychiatric ward, other).

The study was approved by the local ethics committee on March 19th, 2021. A consent form was not required, since all the data were collected anonymously to allow statistical elaboration and were managed in aggregate form to avoid patients’ identification.

Statistical Analysis

All relevant variables were included in a general database and analyzed by using the SPSS 16.0 software. Basic descriptive statistics were performed, with continuous variables presented as absolute Numbers (N), mean, Standard Deviation (SD) and categorical variables as frequencies and percentages.

The sample was divided into two groups: variables related to post lockdown period (May 4th, 2020-August 31th, 2020) and variables related to the control period (May 4th, 2020-August 31th, 2019).

The association between each variable and the period was tested using the chi-square. All variables found to be statistically significant in univariate analyses and with a missing rate <20% were included in a multivariable binary logistic regression model. Results are reported as Odds Ratios (OR) with 95% confidence intervals (95% CI). The significance level was set at 5%.

Results

Considering the whole period, an increase of 9.4% of psychiatric assessments was observed (p=0.16). The difference was thus significant in the first two months after lockdown (p=0.04), with a 21.7% increase of number of ER accesses (Table 1), while after two months numbers were the same as those of the year before.

Comparison between post-quarantine period and corresponding antecedent period

Table 1 displays the comparison of variables referring to the two time periods, outlining some statistically significant changes. In the multivariate logistic regression model, only admission with anxiety symptoms (OR:0.53 CI: 0.36-0.80) and history of psychiatric disorder (OR:0.52 CI:0.32-0.85) decreased significantly. Moreover, there is an age trend with an increasing age of admission and a significant reduction in people aged <30 years (OR: 0.64 CI:0.42-0.98).

Discussion

In the light of our results there has been a slight increase in number of ER admissions, after the lockdown, compared to those of the previous year, especially in people who had not a positive psychiatric history. Our results, even if lower than expected considering findings of the systematic review and than previous data, point out the psychological discomfort due to the pandemic, the social restrictions during and following lockdown, and the subsequent economic burden, especially in males. The discrepancy with the current literature could be explained in part by the decree approved by the Italian Government in support to workers and their families blocked the collective terminations; this could have postponed the consequences of the economic burden of the pandemic and lowered the psychological discomfort, since the loss of a job is a predictor of social distress. A study carried out in Lombardy during the economic crisis found that the subjects who lost their permanent employment were 17% more likely to receive psychotropic drug prescriptions than the controls, but the difference was significant only for males.

This increase was significant only in the first two months after quarantine, while after that period the numbers aligned to those of the previous year. In our opinion, there has been a sort of rebound effect just after the lockdown, when fragmentation symptoms, that found their place in the ‘outside world’ during lockdown, come back in the inside world, resulting in discomfort with a consequent worsening of psychotic and mood symptoms. By contrast, there was a significant decrease in people referring to the ER for anxiety symptoms, in line with data during lockdown from the same area and with those of previous reports, that reported a gradual decrease in anxiety symptoms. These data are in contrast with a survey from a large Italian sample that found a 17.6% of patients experiencing anxiety symptoms and 41.6% (N = 8,619) reporting to feel at least moderately stressed by the pandemic. The fear of COVID-19 contagion could influence people with anxiety symptoms, since hospitals were by far places at highest risk of contact. They tried to avoid an admission using different strategies as needed therapies and contacts with the outpatient clinics. The increasing age of people referring to the ER is in line with previous data, but only among younger individuals.

Our data are not surprising: it is known that the consequences of the pandemic are more severe in people aged 65+ years both in terms of death (about 8/10 deaths) and intensive care admissions. The fear for the pandemic could thus induce or worsen a psychiatric disorder. Moreover, old people have a reduced perception of their life and physical health, and they usually suffer also from co-morbid conditions requiring follow-up visits and on-going assistance: the loss of social networks may create a situation in which mental health and psychosocial support needs of many older people are no longer met. For the millions of older people who live in care facilities, physical distancing measures (that restrict visitors and group activities) persisting after the lockdown, can negatively affect their well-being and, consequently, their mental health.
Table 1. General characteristics of the sample during lockdown and, for comparison, during a corresponding period in 2019.

| Variable                                               | post-lockdown | 2019 control period | Significance (p) |
|--------------------------------------------------------|---------------|----------------------|-----------------|
|                                                        | N  | %     | N  | %     |                  |
| Age range (years)                                       |    |       |    |       |                  |
| <31                                                    | 115 | 23.1  | 148 | 32.5  | 0.003            |
| 31-45                                                  | 133 | 26.7  | 112 | 24.6  |                  |
| 46-65                                                  | 152 | 30.5  | 136 | 29.8  |                  |
| >65                                                    | 98  | 19.7  | 60  | 13.2  |                  |
| Gender                                                 |    |       |    |       | 0.363            |
| Male                                                   | 262 | 50.7  | 226 | 49.6  |                  |
| Female                                                 | 237 | 47.5  | 230 | 50.4  |                  |
| Marital status                                         |    |       |    |       | 0.048            |
| Single                                                 | 230 | 52    | 233 | 59.6  |                  |
| Married/cohabitant                                     | 125 | 28.3  | 105 | 26.9  |                  |
| Divorced                                               | 63  | 14.3  | 34  | 8.7   |                  |
| Widowed                                                | 24  | 5.4   | 19  | 4.9   |                  |
| Ethnicity                                              |    |       |    |       | 0.192            |
| Italian                                                | 422 | 84.7  | 372 | 81.6  |                  |
| Foreign                                                | 76  | 15.3  | 84  | 18.4  |                  |
| Occupation                                             |    |       |    |       | 0.003            |
| Current worker                                         | 125 | 29.6  | 113 | 31.8  |                  |
| Retired                                                | 99  | 23.4  | 46  | 13    |                  |
| Socially inactive (student, housewife, disabled)       | 70  | 16.5  | 66  | 18.6  |                  |
| Unemployed                                              | 129 | 30.5  | 130 | 36.6  |                  |
| Housing status                                         |    |       |    |       | 0.776            |
| Alone                                                  | 79  | 17.1  | 62  | 14.5  |                  |
| Family of origin                                       | 158 | 34.3  | 146 | 34.1  |                  |
| Acquired family                                        | 140 | 30.4  | 131 | 30.6  |                  |
| Therapeutic center                                     | 66  | 14.3  | 65  | 15.2  |                  |
| Homeless                                               | 5   | 1.1   | 6   | 1.4   |                  |
| Other                                                  | 13  | 2.8   | 18  | 4.2   |                  |
| Comorbidity                                            |    |       |    |       | 0.033            |
| No                                                     | 280 | 64.8  | 284 | 71.7  |                  |
| Yes                                                    | 152 | 35.2  | 112 | 28.3  |                  |
| History of psychiatric disorders                       |    |       |    |       | 0.019            |
| No                                                     | 91  | 18.2  | 58  | 12.7  |                  |
| Yes                                                    | 408 | 81.8  | 398 | 87.3  |                  |
| In psychiatric care                                    |    |       |    |       | 0.350            |
| Current                                                | 295 | 59.1  | 289 | 63.3  |                  |
| Past                                                   | 86  | 17.2  | 75  | 16.4  |                  |
| Never                                                  | 118 | 23.6  | 92  | 20.2  |                  |
| Reason for ER admission                                |    |       |    |       | 0.007            |
| Suicide ideation/self-harm/suicide attempt             | 65  | 13.0  | 44  | 9.6   |                  |
| Psychomotor agitation/intoxication/confusion           | 181 | 36.3  | 148 | 32.5  |                  |
| Psychotic episode                                      | 64  | 12.8  | 43  | 9.4   |                  |
| Mood symptoms                                          | 79  | 15.8  | 77  | 16.9  |                  |
| Anxiety symptoms                                       | 110 | 22.0  | 144 | 31.6  |                  |
| Psychiatric diagnosis                                  |    |       |    |       | 0.362            |
| Psycho-organic disorder                                | 24  | 5.3   | 37  | 7.4   |                  |
| Psychotic disorder                                     | 65  | 14.3  | 79  | 15.9  |                  |
| Mood disorder                                          | 84  | 18.5  | 110 | 22.1  |                  |
| Anxiety disorder                                       | 38  | 8.4   | 38  | 7.6   |                  |
| Personality disorder                                   | 48  | 10.5  | 31  | 6.2   |                  |
| Intellectual disability                                | 18  | 4     | 26  | 5.2   |                  |
| Addiction disorder                                     | 31  | 6.4   | 37  | 5.8   |                  |
| Adjustment disorder                                    | 51  | 11.2  | 51  | 10.3  |                  |
| Axis I/Axis II diagnosis                               | 14  | 3.1   | 13  | 2.6   |                  |
| Dual diagnosis                                         | 82  | 18.0  | 81  | 18.3  |                  |
| Measure taken by the psychiatrist                      |    |       |    |       | 0.030            |
| No measure, drug prescription                          | 112 | 24.6  | 125 | 25.1  |                  |
| Send to the outpatient                                 | 212 | 46.6  | 203 | 40.7  |                  |
| Psychiatric ward admission                             | 95  | 20.9  | 142 | 28.5  |                  |
| Other measure (e.g. other ward admission)              | 36  | 7.9   | 29  | 5.8   |                  |

ER: Emergency Room.
Lastly, older people have always suffered from the lack of structural training and work policies, the precariousness or the protections necessary for carrying out the same. The data on employment, in fact, emphasize how accesses of people socially/working inactive, are high in both periods, defining the work as a determinant of health.

**Limitations**

Our study has several limitations. First, the retrospective design could have led to biases in the collection of some variables. Second, we focused on psychiatric visits: in some cases, the same patient may have more than one admission and this could lead to an overestimation of some demographic variables. Third, due to the fact that ER database does not provide diagnoses following international classifications, such as ICD, we used descriptive psychiatric diagnoses formulated by the clinician, following clinical evaluation and using natural language. Finally, the study was performed in a local setting and, hence, generalizability of our findings may be limited.

**Conclusions**

There has been a mild increase in number of ER admissions, after the lockdown, compared to those of the previous year, especially in people who had not a positive psychiatric history. Further studies in larger populations are needed to confirm data from our sample. Moreover, studies carried when collective terminations will be unblocked could give us the real economic burden of the pandemic and the psychiatric consequences.

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