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ORIGINAL ARTICLE/ARTIGO ORIGINAL

The Invisible Enemy that Stopped the World: The Impact of the COVID-19 Pandemic on Psychiatric Hospitalizations in a Portuguese Department

O Inimigo Invisível que Parou o Mundo: Impacto da Pandemia COVID-19 nos Internamentos Psiquiátricos de um Hospital Português

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Abstract
Introduction: The World The World Health Organization declared the coronavirus outbreak a pandemic on March 11th 2020. Since then, the containment measures are leading to increasing mental health problems in the general population and worsening of some pre-existing psychiatric conditions. To our knowledge, there are no studies characterizing the impact of the COVID-19 pandemic on psychiatric hospitalizations across the world. We aim to compare the number and characteristics of the hospitalizations in the mental health department of a Portuguese psychiatric hospital from March 2nd 2019 to October 31st 2019 with those that occurred in the same period in 2020.
Methods: We conducted a retrospective observational study including all patients admitted to hospital during these periods (n=805). Sociodemographic data, clinical characteristics and information about the context of hospitalization were collected. Statistical analysis was performed using *t* Student Test, Mann-Whitney and Chi-square.
Results: In the pandemic period there was a marked reduction in the number of psychiatric hospitalizations. There was a statistically significant difference in the median length of stay and in the percentage of involuntary hospitalizations between the two periods. In 2019, the most frequent International Classification of Diseases (10th Revision) diagnostic categories were F30-F39 (mood disorders) and in 2020 were F20-F29 (schizophrenia, schizotypal and delusional disorders).
Conclusion: The reorganization of services and the decrease in admissions through the emergency department may explain these results.

Resumo
Introdução: A Organização Mundial de Saúde declarou o surto de infeção por SARS-CoV-2 como pandemia a 11 de março de 2020. Desde então, as medidas de contenção estão a provocar não só um aumento da incidência de problemas de saúde mental na população geral, mas também o agravamento de doenças psiquiátricas pré-existentes. Segundo o nosso conhecimento, não existem ainda estudos que caracterizem os internamentos psiquiátricos durante o período pandémico. Os autores pretendem comparar o número e as características dos internamentos psiquiátricos no período entre 2 de março de 2019 e 31 de outubro de 2019 com os do período homólogo de 2020, num departamento de um hospital psiquiátrico português.
Métodos: Foi feito um estudo observacional retrospetivo que incluiu todos os indivíduos admitidos no internamento durante esses períodos (n=805). Foram colhidos dados sociodemográficos, clínicos e acerca do contexto do internamento e para a análise estatística utilizaram-se os testes de Mann-Whitney, Qui-quadrado e *t Student*.

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Resultados: Verificou-se que durante o período pandémico houve uma marcada redução do número de internamentos. Houve uma diferença estatisticamente significativa na mediana do número de dias de internamento e na percentagem de internamentos compulsivos dos dois períodos. Em 2019 as categorias de diagnóstico mais frequentes, de acordo com a Classificação Internacional de Doenças (10ª edição), foram as F30-F39 (perturbações do humor) e em 2020 foram as F20-F29 (esquizofrenia, perturbação esquizotípica e perturbações delirantes).
Conclusão: A reorganização dos serviços hospitalares e a diminuição das admissões no serviço de urgência podem justificar estes resultados.

Keywords: COVID-19; Hospitalization; Mental Disorders; Pandemics.

Palavras-chave: COVID-19; Hospitalização; Pandemia; Perturbações Mentais

INTRODUCTION

Human civilization is probably facing the most critical juncture of this millennium while its existence is being challenged.[1] The coronavirus (COVID-19) pandemic has had a major impact on the lives of millions of people around the world, not only because of its rapid spread and significant mortality, but also due to the changes in people's daily lives, the devastating impact on economy and the profound reformulation of social structures and health systems.[2] Most world leaders were forced to take measures to contain and control the spread of the virus, including social distancing and quarantine as the fundamental disease control tools,[3-4] interventions that are likely to produce a considerable burden on the mental health of affected populations.[5] According to the Portuguese national mental health survey,[6] Portugal has the second highest 12-month prevalence of psychiatric illnesses in Europe and the estimated risk of having had at least one psychiatric disorder is 42.7%. This percentage is surpassed only by the USA (47.4%) and contrasts with the estimated prevalence in other southern European countries, such as Spain (19.4%) and Italy (18.1%).[7]

In our country, the first case of COVID-19 was reported on March 2nd 2020 and, with the continuous rise of cases reported daily, the first state of emergency was declared on March 18th 2020,[8] and maintained for a total of 45 days. On October 31st 2020, there were a total of 144 341 infected people announced and 2544 deaths, with about 3000-5000 new cases and more than 30 deaths per day. Also, there were 64 805 people in surveillance by the Portuguese public health authorities for having had high-risk contacts with infected people in the previous 14 days.[9] Since the beginning of the pandemic our government has implemented measures to control the disease and defend public health through social distancing interventions, such as the suspension of school activities, travel restrictions and home confinement.[10] All services and activities considered non-essential ceased whenever deemed necessary. Simultaneously, the Portuguese National Health Service had to adjust to ensure the response to essential care and the burden imposed by the pandemic: thousands of non-urgent medical acts were canceled and many elective surgeries and medical appointments were postponed. The psychiatry and mental health services have also adapted their assistance to the population, changing the functioning of the wards and limiting appointments and home visits to the most urgent cases; non-urgent outpatient appointments started to be carried out by telephone and other digital health interventions were adopted to support continuity of care. However, these changes did not prevent the temporary closure of several ambulatory facilities for psychiatry patients and acute day hospitals, abruptly interrupting the provision of mental health care to a large number of patients.[11] In the inpatient setting, most group therapies and socio-occupational activities were canceled, visits were prohibited and patients were no longer able to go outside. Furthermore, as in other countries,[12] admission criteria have been tightened.

Bearing in mind the enormous challenges that the COVID-19 pandemic presented to our society, a profound impact on mental health is expected to occur, especially for those at risk of developing a psychiatric illness and those with an already established one.[5,13] Prior studies showed that mental well-being had been heavily affected in previous global pandemics.[14,15] During epidemics and pandemics, the number of people whose mental health is affected tends to be greater than the number of people affected by the infection and the effects on mental health could potentially be even more detrimental in the long run than the virus itself.[16,17] Some studies showed that the imposed mass quarantine applied by nationwide lockdown programs can produce mass hysteria, anxiety and distress, due to factors like sense of getting cornered and loss of control. This can be intensified if families need to be separated, by uncertainty about disease progression, insufficient supply of basic essentials, financial losses, increased perception of risk, which usually are magnified by vague information and inadequate communications by the media in the early phase of a pandemic.[5,18,19] The spread of fear and anxiety, racism, discrimination, and marginalization, with all its social and economic ramifications, influences not only emotional responses to current circumstances, but also leads to a worsening of pre-existing psychiatric disorders.[10,20,21]

Several studies about the possible impact of the current pandemic on mental health have been published across the world and, recently, a group of Portuguese researchers studied that impact on psychiatric emergency department

visits.[11] However, none has yet addressed the characterization of psychiatric hospitalizations.

Hospital Magalhães Lemos (HML) is the psychiatric hospital located in the northern region of Portugal, in the city of Porto, covering a referral geographical area of 12 councils and a global population of 136 369 inhabitants[22] and ensuring acute psychiatric hospitalizations of several hospital centers that do not have an acute inpatient service (Centro Hospitalar de Entre Douro e Vouga, Unidade de Saúde Local de Matosinhos, Centro Hospitalar e Universitário do Porto, Centro Hospitalar da Póvoa de Varzim/ Vila do Conde, Centro Hospitalar do Médio Ave). Thus, HML guarantees acute inpatient care for patients from a very large geodemographic area, with more than one million inhabitants.[23] In addition, when other hospitals are overcrowded (Centro Hospitalar de Vila Nova de Gaia/ Espinho, Centro Hospitalar São João, Centro Hospitalar Tâmega e Sousa) and their patients need to be hospitalized in the acute phase of disease, they are admitted to HML. After admission, all patients stay under close surveillance for a short period of time in the Intensive Intervention Service (IIS), after which they are assigned to one of four units, usually according to their catchment area. Once transferred from the IIS to the inpatient units, the treatment continues until the patient is recovered and can be discharged from the hospital as an outpatient or until there is a vacancy to continue inpatient care at the hospital to which the patient belongs.

We aimed to study the impact of the COVID-19 pandemic on psychiatric hospitalizations, comparing their numbers and characteristics from March 2nd 2019 to October 31st 2019 with the same period in 2020.

METHODS

We conducted a retrospective observational study including all patients admitted to our unit between March 2nd 2020 (the date when the first case of COVID-19 was confirmed in our country) and October 31st 2020 and in the homologous period of 2019 (pre pandemic period). Two subgroups were formed based on year of hospitalization in order to compare the impact of the COVID-19 pandemic in the number and characteristics of psychiatric hospitalizations. The same time period was chosen in both years to prevent the possible effect of seasonality on the manifestation of psychiatric disorders. Clinical records were consulted and data regarding admission date, sex, age at admission, psychiatric history, previous hospitalizations, number of days of hospitalization, compulsory hospitalizations, primary diagnosis at discharge and destination were collected in a database. All diagnoses were coded according to the International Classification of Diseases, tenth revision (ICD-10). All information collected were extracted anonymously and destroyed after being processed.

Statistical analysis was performed using IBM SPSS Statistics version 26. Descriptive analyses of the variables in both periods included frequencies and percentages for categorical variables and means and standard deviations, after checking for symmetry, for continuous variables. Independent samples *t* test was used to compare quantitative variables with normal distribution and Mann-Whitney otherwise. Chi-square test was calculated to measure the association between categorical variables. Results with *p*-value <0.05 were considered statistically significant.

RESULTS

Between March 2nd 2020 and October 31st 2020 there were a total of 324 psychiatric hospitalizations, a statistically significant reduction (-32.6%) compared to the same period of 2019 (n=481). In 2019, 55.7% (n=268) of the hospitalized patients were female, 39.2% (n=127) in 2020 (Table 1). There was no statistically significant difference regarding the mean age at admission between the studied periods (48.29 years in 2019, 48.64 years in 2020). Ages ranged between 18 and 85 years old in 2019 and between 18 and 90 years old in 2020. The most prevalent age group was that of patients aged between 31 and 50 years old in both periods. The analysis of relative differences by age group showed that the hospitalizations of older people had a higher increase when compared to the other groups (3.2% in the group over 70 years), but, in absolute terms, there was no increase in the number of hospitalizations in any age group in 2020 (Table 1). Regardless of a previous personal psychiatric history, the proportion of first psychiatric hospitalizations increased from 31.2% to 36.7% in 2020 (Table 1). Despite the fact that most hospitalizations were voluntary, the proportion of compulsory hospitalizations increased 14.3 percentage points in 2020, a statistically significant variation (n=78, 16.2% in 2019 *vs* n= 99, 30.5 % in 2020; p <0.001) (Table 1). Regarding the length of stay, hospitalizations in 2020 were shorter, with a median duration of 16 days in the pre pandemic period and 12 days in 2020 (p <0.001). Most hospitalizations lasted less than 14 days in both periods and this group of shorter length of stay was the only one whose proportion increased from 2019 to 2020 (n=222, 46.4% in 2019 *vs* n=188, 59.5% in 2020). There was a clear reduction in the proportion of medium-long hospitalizations in 2020, particularly in the 15-30 days group (Table 1). Three of the patients hospitalized in 2019 and 8 of those hospitalized in 2020 were not yet discharged at the time of the analysis of the results, and were not included in the analysis. 20% (n=96) of the 2019 hospitalization episodes and 18.2% (n=59) of the 2020 episodes ended with the transfer of patients to another hospital.

No statistically significant differences were found between the two periods with regard to the primary diagnosis. The most frequent category was F30-39 (mood disorders, n= 155, 32.2%) in the pre-pandemic period and F20-29 (schizophrenia, schizotypal and delusional disorders, n= 127, 39.2%) in 2020 (Table 2).

The proportion of the categories F20-F29, F00-F09 (organic, including symptomatic, mental disorders), F50-F59 (behavioral syndromes associated with physiological disturbances and physical factors) and F80-F89 (disorders of psychological development) increased from 2019 to 2020, and all others decreased.

The sharpest decline was in the category F30-F39 (-4.1%), with the greatest contribution from the decrease of unipolar depressive episodes, followed by F60-F69 (disorders of adult personality and behavior – less 3.6%) and F10--F19 (mental and behavioral disorders due to psychoactive substance use – less 3.1%) (Table 2). The most significant increase was in the F20-F29 group (n= 148, 30.8% in 2019 *vs* n= 127, 39.2% in 2020), followed by an increase of 1.9 percentage points in the F00-F09 group. The category F80-F89 was only registered in 2020, and only once (F84.5 - Asperger's syndrome) (Table 2).

Table 1: Characteristics of psychiatric hospitalizations during the period between March 2nd 2020 and October 31st 2020 compared to homologous period in 2019.

Variables	2019	2020	Δ (2020-2019) %	p- value
Total psychiatric hospitalizations (n)	481	324	-32.6	**p <0.001***
Sex (n; %)				p <0.001*
Female	268; 55.7	127; 39.2	-16.5	
Male	213; 44.3	197; 60.8	16.5	
Age (years) (M; SD)	48.29; 13.52	48.64; 16.6	NA	p =0.760†
Age group (n; %)				p =0.357*
18-30 years	70; 14.6	53; 16.4	1.8	
31-50 years	196; 40.7	124; 38.3	-2.5	
51-70 years	177; 36.8	111; 34.3	-2.5	
>70 years	38; 7.9	36; 11.1	3.2	
Personal history of psychiatric ilness (n; %)				p =0.106*
No	58; 12.1	52; 16.0	4.0	
Yes	423; 87.9	272; 84.0	-4.0	
First psychiatric hospitalization (n; %)				p =0.102*
No	331; 68.8	205; 63.3	-5.5	
Yes	150; 31.2	119; 36.7	5.5	
Type of hospitalization (n; %)				p <0.001*
Voluntary	403; 83.8	225; 69.4	-14.3	
Compulsive	78; 16.2	99; 30.5	14.3	
Number of days of hospitalizations (Mdn; P25-P75)	16.00; 7.00- 28.00	12.00; 7.00-20.0	NA	p <0.001‡
Number of days of hospitalizations, by groups (n; %)				p <0.001*
≤ 14 days	222; 46.4	188; 59.5	13.1	
15-30 days	157; 32.8	86; 27.2	-5.6	
31-90 days	83; 17.4	39; 12.3	-5.0	
> 90 days	16; 3.3	3; 0.9	-2.4	
Transfers to another department or hospital (n; %)				p =0.537*
No	385; 80.0	265; 81.8	1.7	
Yes	96; 20.0	59; 18.2	-1.7	

M- mean; SD- standard deviation; Mdn- median; P25- percentile 25; P75- percentile 75; NA: not applicable
* chi- square test; † t-student test ; ‡ Mann-Whitney Test

Table 2: Primary diagnosis according to the International Classification of Diseases, tenth revision.

Variables	2019	2020	Δ (2020-2019) %	p- value (chi- square test)
Main diagnosis, by ICD-10 groups (n; %; order)				p =0.08
F00-F09	34; 7.1; 6	29; 9.0; 3	1.9	
F10-F19	37; 7.7; 4	15; 4.6; 5	-3.1	
F20-F29	148; 30.8; 2	127; 39.2; 1	8.4	
F30-F39	155; 32.2; 1	91; 28.1; 2	-4.1	
F40-F48	39; 8.1; 3	26; 8.0; 4	-0.1	
F50-F59	1; 0.2; 9	2; 0.6; 9	0.4	
F60-F69	35; 7.3; 5	12; 3.7; 7	-3.6	
F70-F79	21; 4.4; 7	14; 4.3; 6	-0.1	
F80-F89	0; 0.0; 10	1; 0.3; 10	0.3	
F90-F98	11; 2.3; 8	7; 2.2; 8	-0.1	

ICD-10: International Classification of Diseases, tenth revision.
F00-F09: Organic, including symptomatic, mental disorders; F10-F19: Mental and behavioural disorders due to psychoactive substance use; F20-F29: Schizophrenia, schizotypal and delusional disorders; F30-F39: Mood disorders; F40-F48: Neurotic, stress-related and somatoform disorders; F50-F59: Behavioural syndromes associated with physiological disturbances and physical factors; F60-F69: Disorders of adult personality and behaviour; F70-F79: Mental retardation; F80-F89: Disorders of psychological development; F90-F98: Behavioural and emotional disorders with onset usually occurring in childhood and adolescence.

DISCUSSION

To our knowledge, this is the first study reporting the impact of the COVID-19 pandemic on psychiatric hospitalizations. As described above, in 2020 the number of psychiatric hospitalizations and the length of stay decreased sharply, the involuntary hospitalizations increased, the proportion of the ICD-10 categories F20-F29 and F00--F09 increased and the categories F30-F39 and F60-F69 declined.

Portugal stands out as the major user of emergency services per capita within the Organization for Economic Cooperation and Development (OECD)[24] but a study conducted by a Portuguese team showed that there was a 52.2% relative decrease in the total number of visits to the Porto Metropolitan Psychiatric Emergency Department (UMPP) between March 2020 and May 2020, when compared to the same period in 2019.[11] Another Portuguese study with data from across the country showed a decrease in demand for hospital emergency services during the first month of the COVID-19 pandemic.[25] Knowing that the majority of inpatients admitted to HML are referred from the UMPP, if we extrapolate these results to the period covered by our study, the decrease in the number of psychiatric hospitalizations was not surprising. The awareness of the population of not overloading the services and the fear of being infected in hospital settings were important factors in the decision to not use the emergency service in less severe cases.

Our finding of the relative higher increase of hospitalizations of the elderly in the pandemic period is in line with the increase in the proportion of the F00-F09 diagnostic categories (+1.9%), which include dementia syndromes. People with dementia and other cognitive disorders are particularly vulnerable in pandemic situations, since the characteristics of these diseases can lead them to contradict or not understand the importance of confinement measures and family members' recommendations, resulting in periods of greater distress. Additionally, those who use day-care centers or live in nursing homes ended up being faced with foreclosure or were deprived of visits from family members, which also contributed to greater psychopathological destabilization and periods of agitation requiring hospitalization.[26] Pandemic environments of greater social isolation tend to make older people more vulnerable to symptoms such as anxiety and depression, due to the heightened sense of disconnection from society, physical distance and loss of usual social opportunities.[27,28] Anyway, the diagnostic category F20-F29 had an even greater relative increase in 2020 (+8.4%) and was the most frequent cause of hospitalization. Schizophrenia, schizotypal and delusional conditions can lead to psychotic symptoms or behavioral disorganization that may represent serious risk, mainly for suicidal ideation, agitation or violent behavior, which often needs urgent intervention and hospitalization.[29] Additionally, some families had to adjust their daily routines with mandatory confinement or teleworking, spending more time at home, sharing the same space, and having the additional role of being caregivers. The lack of capacity to deal with the specific requirements of these disorders may contribute to the increase of emotional distress and to the exhaustion of the caregivers, probably contributing to some hospitalizations. On the other hand, the increased expressed emotion by family members can contribute to make patients feel insecure in their usual environments, increasing the probability of psychopathological decompensation.

According to the Portuguese study mentioned above, schizophrenia and other psychotic disorders was the diagnostic group which had the smallest decline (9.8% decrease) in psychiatric emergency department visits, as expected because they are the most severe mental illnesses. The limitation of access to primary health care services, the closure of several ambulatory facilities for psychiatry patients and the decrease in the number of outpatient consultations, as well as social distancing and quarantine, may have contributed to a later detection of psychopathological decompensation and higher degree of disorder severity, requiring inpatient therapeutic interventions. The increases in the proportions of the F00-F09 and F20-F29 diagnostic categories in the pandemic period are also due to the decrease in the others.

In the opposite direction, mood disorders, the most prevalent diagnostic category in 2019, was the group with the biggest decline in 2020 (-4.1%), mainly due to the decrease of moderate unipolar depressive episodes. This finding was less expected, because factors such as longer quarantine duration, infection fears, frustration, boredom, inadequate supplies, inadequate information, financial loss, and stigma can work as stressors[5] and exposure to severe or persistent social stress is a risk factor for affective disorders.[30] However, previous studies showed that major stressor events often lead to later manifestations of depressive disorder.[31-34] It would be interesting to study the long-term impact of the pandemic on mood disorders, when the COVID-19 is under control, all restrictions have been lifted and everyday life has returned to normal.

The study previously mentioned[11] also found a higher emergency department demand by the personality disorders group during the pandemic period. An increase of hospitalization would also be expected, due to the closure of acute day hospitals and their behavioral functioning and pattern of response to stress. However, our results did not meet these expectations. This may be mainly explained by the narrowing of hospitalization criteria. Furthermore, in our hospital, the Day Hospital and the Outpatient Clinic remained open and maintained the follow up and treatment of these patients.

As described above, the most prevalent diagnoses in the 2020 hospitalizations were the most severe mental illnesses (schizophrenia, schizotypal and delusion disorders and affective bipolar disorder) and dementia syndromes. These individuals often lack insight for their condition and for the need for treatment, refusing to be hospitalized and decreasing the likelihood of adherence to the recommended measures in the context of outpatient treatment. This may explain the increase of involuntary hospitalizations in the pandemic period (Table 1). From another point of view, some patients spent more time with their cohabitants

and others lost all social and familiar support. In the first case families or caregivers could more easily recognize the worsening of the disease and, in the second case, psychopathological decompensation may have been detected later, both resulting in more compulsory hospitalizations.

Regarding previous history, we found that the proportion of first episodes of psychiatric hospitalization was higher in 2020 (36.7% *vs* 31.2%), with a distribution by ICD-10 diagnostic categories similar to that of patients with previous hospitalizations. These differences had no statistical significance.

Hospitalizations were globally shorter in the pandemic period than in the previous year, probably due to the increase in social responses (vacancies in nursing homes created by the death of infected users), the lower resistance of families to receive after discharge (because of the fear of being infected during the hospital stay and the desire to be closer to their relatives caused by the suspension of visits) and the need to have free isolation beds for infected patients. These factors contributed mainly to the reduction of medium-long hospitalizations.

As a limitation of this study, we only included patients admitted to one of the four HML´s inpatient units. Another important note is that about 20% of patients were transferred to the hospital of their catchment area (Table 1) as soon as they got vacancies in inpatient services, and diagnosis at discharge and at the transfer date may not be the same.

CONCLUSION

Much has been written about the mental health consequences of the COVID-19 pandemic but not about the pandemic impact on psychiatric hospitalizations. Overall, the results are in line with expectations. In addition to the reduction in demand for health services, the pandemic seems to have increased the severity threshold for patient admission. Believing that COVID-19 pandemic and its consequences are likely to be long-lasting, this knowledge can help mental health units to anticipate future difficulties and prepare intervention plan.

Responsabilidades Éticas

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Confidencialidade dos Dados: Os autores declaram ter seguido os protocolos da sua instituição acerca da publicação dos dados de doentes.

Proteção de Pessoas e Animais: Os autores declaram que os procedimentos seguidos estavam de acordo com os regulamentos estabelecidos pelos responsáveis da Comissão de Investigação Clínica e Ética e de acordo com a Declaração de Helsínquia de 2013 da Associação Médica Mundial.

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References

1. Jones DS. History in a crisis - lessons for covid-19. N Engl J Med. 2020;382:1681–3. doi:10.1056/NEJMp2004361.
2. Callaway E, Cyranoski D, Mallapaty S, Stoye E, Tollefson J. Coronavirus by the numbers. Nature. 2020; 579:482–3.
3. Lewnard JA, Lo NC. Scientific and ethical basis for social-distancing interventions against COVID-19. Lancet Infect Dis. 2020;20:631–3. doi: 10.1016/S1473-3099(20)30190-0.
4. Rubin GJ, Wessely S. The psychological effects of quarantining a city. BMJ. 2020;368:m313. doi:10.1136/bmj.m313.
5. Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. Lancet. 2020;395:912-20. doi:10.1016/S01406736(20)304608.
6. Caldas de Almeida JM, Xavier M, Cardoso G, Gonçalves-Pereira M, Gusmão R, Corrêa B, et al. Estudo epidemiológico nacional de saúde mental- 1° relatório. Lisboa: Faculdade de Ciências Médicas, Universidade Nova de Lisboa; 2013.
7. Wang PS, Aguilar-Gaxiola S, AlHamzawi AO, Alonso J, Andrade LH, Angermeyer M, et al. Treated and untreated prevalence of mental disorder worldwide. Oxford Textbook of Community Mental Health. Oxford: Oxford Press; 2011.
8. Portugal. Diário da República n.° 55/2020, 3° Suplemento, Série I de 2020-03-18.

9. Relatório de Situação da DGS, nº244.
10. Santos CF. Reflections about the impact of the SARS-COV-2/COVID-19 pandemic on mental health. Braz J Psychiatry. 2020;42:329. doi:10.1590/1516-4446-2020-0981.
11. Gonçalves-Pinho M, Mota P, Ribeiro J, Silvério--Macedo, Freitas A. The Impact of COVID-19 Pandemic on Psychiatric Emergency Department Visits – A Descriptive Study. Psychiatric Q. 2021;92:621--31. doi: 10.1007/s11126-020-09837-z.
12. Yu-Tao Xiang, Yan-Jie Zhao, Zi-Han Liu, Xiao-Hong Li, Na Zhao, Teris Cheung, et al. The COVID-19 outbreak and psychiatric hospitals in China: managing challenges through mental health service reform. Int J Biol Sci. 2020;16: 1741-44. doi:10.7150/ijbs.45072.
13. Yao H, Chen JH, Xu YF. Patients with mental health disorders in the COVID-19 epidemic. Lancet Psychiatry. 2020;7:e21. doi:10.1016/S2215-0366(20)30090-0.
14. Sim K, Chua HC. The psychological impact of SARS: a matter of heart and mind. CMAJ. 2004;170:811-2. doi:10.1503/cmaj.1032003.
15. Wu P, Fang Y, Guan Z, Fan B, Kong J, Yao Z,et al. The psychological impact of the SARS epidemic on hospital employees in China: exposure, risk perception, and altruistic acceptance of risk. Can J Psychiatr. 2009;54:302-11. doi:10.1177/070674370905400504.
16. Depoux A, Martin S, Karafillakis E, Bsd RP, Wilder--Smith A, Larson H. The pandemic of social media panic travels faster than the COVID-19 outbreak. J Trav Med. 2020; 18;27:taaa031. doi:10.1093/jtm/taaa031.
17. Peng EY, Lee MB, Tsai ST, Yang CC, Morisky DE, Tsai LT, et al. Population-based post-crisis psychological distress: an example from the SARS outbreak in Taiwan. J Formos Med Assoc. 2010;109:524-32. doi:10.1016/S0929-6646(10)60087-3.
18. Maunder R, Hunter J, Vincent L, Bennett J, Peladeau N, Leszcz M, et al. The immediate psychological and occupational impact of the 2003 SARS outbreak in a teaching hospital. CMAJ. 2003;168:1245-51.
19. Hawryluck L, Gold WL, Robinson S, Pogorski S, Galea S, Styra R. SARS control and psychological effects of quarantine, Toronto, Canada. Emerg Infect Dis. 2004;10:1206-12. doi: 10.3201/eid1007.030703.
20. European Commission. European Economic Forecast Spring 2020. Brussels:EC; 2021. doi:10.2765/392612.
21. World Health Organization. Mental health and psychosocial considerations during the COVID-19 outbreak. [accessed Dez 2020] Available from:https://www.who.int/docs/default-source/
22. Administração Regional de Saúde do Norte.Plano Regional de Saúde Mental da ARSN, IP - Coordenação Regional de Saúde Mental – ARS Norte. Porto:ARSN; 2019.
23. Relatório e Contas 2017, Hospital de Magalhães Lemos, EPE. [accessed Dez 2020] Available from: http://www.hmlemos.min-saude.pt/docs/reginterno.pdf
24. Berchet C. Emergency Care Services: Trends, Drivers and Interventions to Manage the Demand: OECD Health Working Papers 83. Paris: OECD; 2015. doi: 10.1787/5jrts344crns-en
25. Santana R, Sousa JS, Soares P, Lopes S, Boto P, Rocha JV. The Demand for Hospital Emergency Services: Trends during the First Month of COVID-19 Response. Portuguese J Public Health. 2020;38:30–6. doi: 10.1159/000507764.
26. Wang H, Li T, Barbarino P, Gauthier S, Brodaty H, Molinuevo JL, et al. Dementia care during COVID-19. Lancet. 2020;395:1190–1. doi:10.1016/S0140-6736(20)30755-8.
27. Santini ZI, Jose PE, Cornwell EY, Koyanagi A, Nielsen L, Hinrichsen C, et al. Social disconnectedness, perceived isolation, and symptoms of depression and anxiety among older Americans (NSHAP): a longitudinal mediation analysis. Lancet Public Health. 2020;5:e62–70. doi:10.1016/s2468-2667(19)30230-0.
28. Doraiswamy S, Cheema S, Mamtani R. Older people and epidemics: a call for empathy. Age Ageing. 2020;49:493. doi:10.1093/ageing/afaa060.
29. Pandya A, Larkin GL, Randles R, Beautrais AL, Smith RP. Epidemiological trends in psychosis--related emergency department visits in the United States, 1992–2001. Schizophr Res. 2009;110:28–32. doi:10.1016/j.schres.2008.12.015.
30. Patela D, Kas. JM, Chattarji S, Buwalda B. Rodent models of social stress and neuronal plasticity: Relevance to depressive-like disorders. Behavl Brain Res. 2019;369:111900. doi:10.1016/j.bbr.2019.111900. .
31. Priebe S, Bogic M, Ajdukovic D, Franciskovic T, Galeazzi GM, Kucukalic A, et al. Mental disorders following war in the Balkans: a study in 5 countries. Arch Gen Psychiatry. 2010;67:518–28. doi:10.1001/archgenpsychiatry.2010.37.
32. Karam EG, Mneimneh ZN, Karam AN, Fayyad JA, Nasser SC, Chatterji S, et al. Prevalence and treatment of mental disorders in Lebanon: a national epidemiological survey. Lancet. 2006;367:1000–6. doi:10.1016/S0140-6736(06)68427-4.
33. De Jong JT, Komproe IH, Van Ommeren M, El Masri M, Araya M, Khaled N, et al. Lifetime events and posttraumatic stress disorder in 4 postconflict settings. JAMA. 2001;286555–62. doi:10.1001/jama.286.5.555.
34. De Jong JT, Komproe IH, Van Ommeren M. Common mental disorders in postconflict settings. Lancet. 2003;361:2128–30. doi:10.1016/S0140-6736(03)13692-6.