

Emergency care carried out during the pandemic due to substance abuse in a Spanish province

Atenciones urgentes realizadas durante la pandemia por consumo de tóxicos en una provincia española

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Abstract

Introduction: During periods of isolation, people with substance use disorders may reduce tension, stress, uncertainty and possible distress by increasing the use of substances or practices that they have abused. The objective of this study was to evaluate the impact of the pandemic on emergency care and continuity of care for patients with substance use disorders. **Method:** Study carried out in the only psychiatric emergency service in the province at the Hospital Universitario Santa María de Lérida, which cares for 431,183 people. Sociodemographic, clinical and evolutionary variables were collected from all the patients treated during a period prior to lockdown (January 13, 2020, until March 14, 2020) and during the first (March 15, 2020 until June 20, 2020) and second states of emergency (from October 25, 2020 to May 9, 2021). **Results:** 908 patients attended with substance use disorder, representing 23.8% of all visits. During the first state of emergency, visits increased ($p < 0.001$) with a decrease in the average age ($p = 0.0023$). During the second state of emergency, there was an increase in the use of alcohol with respect to the rest of toxic substances ($p < 0.001$) and an increase in the visits of patients without prior follow-up ($p = 0.005$). **Conclusions:** Substance use disorder consultations increased in the first state of emergency, with patients being younger and attending for reasons related to outpatient discontinuity, while in the second state of emergency, alcohol use increased in people without prior follow-up and with small social networks. Admissions in the first state of emergency were shorter, with no subsequent link to other detoxification treatment centers and with an earlier return to the emergency room, especially in female users.

Keywords: Pandemic; substance use disorder; alcoholism; emergencies; continuity of care.

Resumen

Introducción: Durante los períodos de aislamiento, las personas con trastornos por uso de sustancias pueden reducir la tensión, el estrés, la incertidumbre y la posible angustia aumentando el uso de sustancias o prácticas de las que han abusado. El objetivo de este estudio es evaluar el impacto de la pandemia en las atenciones urgentes y continuidad asistencial de pacientes con trastorno por uso de sustancias. **Método:** Estudio realizado en el único servicio de urgencias de Psiquiatría de la provincia en el Hospital Universitario Santa María de Lérida, que atiende a 431.183 personas. Se recogen variables sociodemográficas, clínicas y evolutivas de todos los pacientes atendidos durante un periodo previo al confinamiento (13 de enero de 2020, hasta el 14 de marzo de 2020) y durante el primer (15 de marzo de 2020 hasta su 20 de junio de 2020) y segundo estado de alarma (desde el 25 de octubre de 2020 hasta el 9 de mayo de 2021). **Resultados:** 908 pacientes atendidos con Trastorno por Uso de Sustancias, representa el 23,8% de todas las visitas. Durante el primer estado de alarma, aumento de las visitas ($p < 0,001$) con una disminución de la edad media ($p = 0,023$). Durante el segundo estado de alarma, aumento del consumo de OH respecto al resto de tóxicos ($p < 0,001$) y un aumento de las visitas de pacientes sin seguimiento previo ($p = 0,005$). **Conclusiones:** Aumentaron las consultas por trastorno por uso de sustancias en el primer estado de alarma siendo más jóvenes y acudiendo por motivos de consulta relacionados con la discontinuidad ambulatoria mientras en el segundo estado de alarma repuntó el consumo de alcohol en personas sin seguimiento previo y con escasa red social. Los ingresos del primer estado de alarma fueron más breves, sin vinculación posterior a otros centros terapéuticos de desintoxicación y con un retorno más precoz a urgencias sobre todo en mujeres consumidoras. **Palabras clave:** Pandemia; trastorno por uso de sustancias; alcoholismo; urgencias; continuidad asistencial.

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The COVID19 crisis created many additional challenges for substance use disorder patients. These included the closure of substance abuse treatment clinics, emergency departments focussing on COVID-19 patients, social distancing rules, and the supply of substances for drug users (Khatri & Perrone, 2020). In the face of these issues, some initiatives aimed at promoting telephone meetings without face-to-face evaluation made it possible to meet the needs of the most vulnerable during the current pandemic (Samuels et al., 2020).

Substance use disorder is highly comorbid with physical and mental illnesses, such as anxiety, depression, personality disorders, eating disorders, and abnormal mood changes (Kim, Qian & Aslam, 2020). During periods of isolation, people with disorders linked to psychoactive substances and other addictions may be tempted to reduce tension, stress, uncertainty, and possible distress by increasing their use of substances or practices that they have abused. This can mean relapses and setbacks for patients undergoing treatment (Fabelo-Roche, Iglesias-Moré & Gómez-García, 2021). On the other hand, drug use patients in complete remission are also in need of attention. A study in Israel analysing the impact of the pandemic on patients in complete remission found that stronger feelings of loneliness and less time free of drug use were associated with a greater desire to use drugs (Bonny-Noach & Gold, 2021). A recent Spanish study also warned that patients with a substance use disorder in remission may also have to cope with stress, thus presenting a greater risk of relapse (García-Álvarez, Fuente-Tomás, Sáiz, García-Portilla & Bobes, 2020).

The pandemic had a significant impact in Spain. For some months in 2020, this was the country with the second highest number of deaths from coronavirus worldwide (Henríquez, Gonzalo-Almorox, García-Goñi & Paolucci, 2020; RTVE 2022). Of the many moments of tension caused by the pandemic, it was perhaps the period coinciding with the first lockdown in Spain (March 14 to June 21, 2020) that caused the greatest shock to Spanish citizens, facing an unprecedented situation (Henríquez et al., 2020). During this period, a state of emergency was decreed, schools were closed, and citizens were ordered to stay in their homes unless they had justified reasons such as unavoidable work, buying food, or urgent treatment at health centres (Henríquez et al., 2020). The lockdown period also had important consequences at an economic level, with Spain the most affected country in Europe in this regard (Expansión, 2022).

The objective of this study was to assess the impact that the COVID 19 pandemic may have had on emergency care provided in a psychiatric ward to patients with substance use disorders, compared with those performed in a previous period.

Method

Sample and procedure

The study was carried out at the Santa María de Lleida University Hospital. This hospital is the only hospital providing emergency psychiatric care in the province of Lleida and has a catchment area of 431,183 people (INE, 2020). The hospital has 52 adult beds, 10 of which are specific for dual pathology, and a network of specific outpatient clinics for addictive behaviours. During the most critical period of COVID-19 transmission, the different units were converted to limit the spread of infection and the outpatient network carried out remote visits following health authority guidelines.

The data for this study were obtained by retrospective review of the digital medical records covering the sociodemographic data of patients, their diagnoses, reasons for consultation, and hospital admissions. The observation periods were: 1) before lockdown, from January 13, 2020, to March 14, 2020 and 2) during lockdown after the first state of emergency was decreed in Spain on March 15, 2020, until it was lifted on June 20, 2020, and during Spain's second state of emergency, from October 25, 2020, to May 9, 2021 (BOE, 2020) (Irigoyen-Otiñano et al., 2022).

Measurements

The following information was gathered from the digital clinical history: number of visits to the emergency department (ED) for psychiatric reasons in all the periods described, sociodemographic profile of patients seeking ED treatment (sex, date of birth, and marital status), psychiatric diagnosis following DSM-IV criteria (Tucker, 1991), reason for consultation and discharge referral.

Statistical analysis

Statistical analyses were performed with the IBM-SPSS v.23 statistical package. Continuous data were expressed as mean $\pm$ standard deviation, while categorical data were presented as percentages. The normal distribution was assessed using the Shapiro-Wilk test. One-way analysis of covariance (ANCOVA) was used to analyze differences between groups (pre-pandemic, first and second states of emergency), and pairwise comparisons were performed to identify which groups were different using estimated marginal means. When analyzing variables across two groups (pre-pandemic and state of emergency), chi-square and Student's t tests were used. As a non-parametric alternative, Fisher's exact and Mann-Whitney U tests were used as appropriate. Kaplan-Meier curves were used for longitudinal variables from hospital discharge (days until the first outpatient visit, days until the first contact with psychiatric emergencies, and days until readmission) to compare the time between pre-pandemic patients and the first state of emergency. Comparisons were made using the log-rank test. Hazard ratios (HR) and 95% confidence intervals

were calculated. Type I error was set at the usual value of 5% ($\alpha = 0.05$), with a two-sided approximation.

The authors affirm that all procedures contributing to this work complied with the ethical standards of the relevant national and institutional committees on human experimentation and with the Declaration of Helsinki of 1975, revised in 2008 (World Medical Association, 2020). This study was approved by the Ethics and Clinical Research Committee of the Arnau de Vilanova University Hospital.

Results

Emergency care performed

We recruited 908 patients with substance use disorder (SUD), representing 23.8% of all visits to the psychiatric emergency department (Table 1). During the first state of emergency, visits were seen to rise ($p < 0.001$), but with a decrease in the mean age of the patients ($p = 0.0023$). During the second state of emergency, an increase in the use of alcohol use was observed compared to other toxins ($p < 0.001$), as was an increase in the visits of patients without previous follow-up ($p = 0.005$). During this period, the number of visits by single patients also fell, while those by separated patients increased ($p < 0.001$ and $p = 0.010$ respectively). Regarding reasons for visiting, we observed a decrease in psychotic symptoms in both states of emergency compared to the pre-pandemic period ($p = 0.019$) and an increase in visits for other reasons in the first state of emergency ($p = 0.020$). We did not find significant changes in home living arrangements, axis II diagnoses or post-discharge referrals between the periods. See Supplementary Table for pairwise comparisons.

When comparing the patients admitted for SUD during the pre-pandemic period and the first state of emergency (Table 2), we found a reduction of 6 ± 3 days in the dura-

tion of hospital stays during the first state of emergency ($p = 0.035$) and an increase of post-discharge home referrals together with a reduction in referrals to other non-hospital facilities ($p = 0.047$ and $p = 0.040$, respectively).

On analysing survival after hospital discharge (Table 2, Figure 1), the median time until an ED visit was found to be lower in patients admitted during the state of emergency than in the previous period (40.1 days vs. 160.7 days; HR for ED visit = 0.37; 95% CI = 0.15 to 0.87). Time to outpatient visit and time to readmission did not show significant differences. By gender, we found median survival until an ED visit to be lower in women than in men during the first state of emergency (38.9 days vs. 67.4 days; HR for the ED visit = 0.32; 95% CI = 0.14 to 0.95) but not during the pre-pandemic period (61.2 days vs. 162.0 days; HR for ED visit = 1.53; 95% CI = 0.33 to 6.95).

Discussion

During the first state of emergency, we observed a significant increase in patients attending the psychiatric emergency department for substance use disorders compared to the pre-pandemic period and to the second state of emergency. Several studies carried out during lockdown also reported rising admissions among substance users (Czeisler et al., 2020; Rehm et al., 2020). The visits for reasons largely related to the problems caused by the interruption of the continuity of care due to the restrictions imposed by the health authorities also stood out (Moreno et al., 2020). In this first state of emergency analyzed in our study, it is worth noting that patients had a lower mean age. This has also been reported in other studies (Faris et al., 2021), and it appears that lockdown affected younger adults in particular, probably because their psychosocial well-being de-

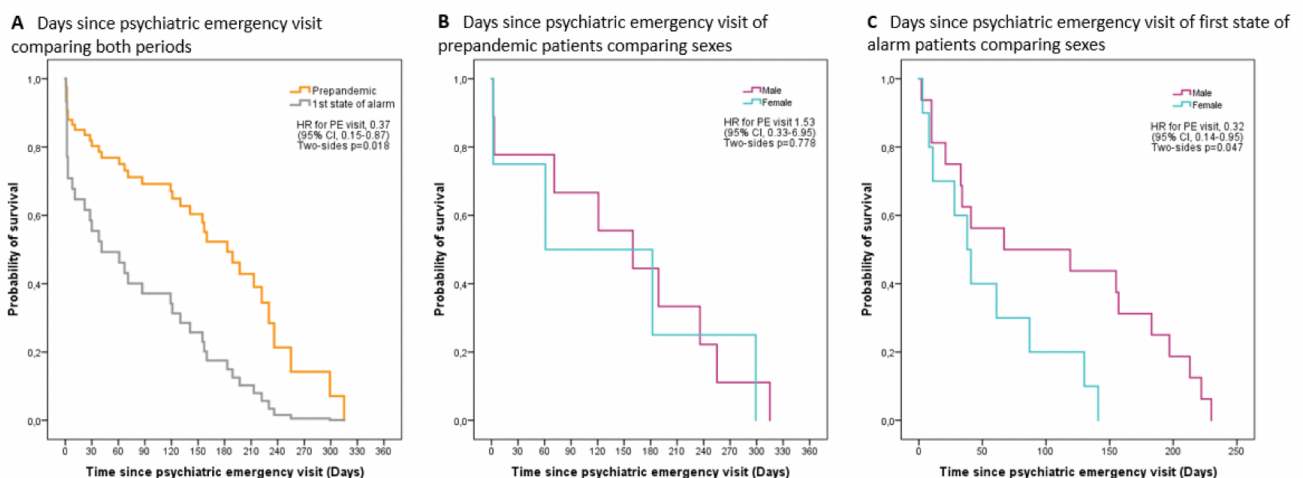


Figure 1. Kaplan-Meier curves analyzing the time (in days) from hospital discharge to the first emergency department visit: A) comparing the pre-pandemic period and the first state of emergency; B) comparing men and women in the pre-pandemic period; C) comparing men and women in the first state of emergency.

Table 1. *Characteristics of visits to the HUSM psychiatry emergency department of patients with substance use disorders during the pandemic.*

	Pre-pandemic (N = 173)	SE 1 (N = 264)	SE 2 (N = 471)	Statistical test; p
% of total during period	(N = 173)	SE 1	471/2212 (21.2)	$\chi^2=22.92$; <0.001*
Substances (%)	(N = 264)	SE 2		
- Alcohol	(N = 471)	Statistical test; p	94 (20)	$\chi^2=27.32$; <0.001*
- Others	156 (90.2)	246 (93.2)	377 (80)	
Women (%)	45 (26)	57 (21.5)	132 (28)	$\chi^2=3.66$; 0.160
Age (SD)	37.2 (11.6)	35.2 (12.06)	37.5 (12.0)	t=-2.45; 0.023*
Marital status (%)				
- Single	94 (56.2)	165 (63.2)	223 (50.1)	$\chi^2=15.73$; <0.001*
- Partner	45 (26.9)	63 (24.1)	111 (25.3)	$\chi^2=0.42$; 0.808
- Separated	27 (16.1)	31 (11.8)	96 (21.9)	$\chi^2=9.24$; 0.010*
- Widowed	1 (0.6)	2 (0.7)	8 (1.8)	F=1.45; 0.374
Home living arrangement				
- Living alone	59 (35.9)	106 (40.6)	161 (36.5)	$\chi^2=2.92$; 0.232
- Living with family	95 (57.9)	139 (53.2)	242 (55)	$\chi^2=0.64$; 0.726
- Institution	10 (6.1)	16 (6.1)	37 (8.4)	$\chi^2=1.28$; 0.525
Reason for visit (%)				
- Psychotic symptoms	12 (6.9)	9 (3.4)	11 (2.3)	$\chi^2=7.89$; 0.019*
- Unipolar symptoms	4 (2.3)	0 (0)	8 (1.6)	$\chi^2=5.35$; 0.069
- Bipolar symptoms	0 (0)	0 (0)	2 (0.4)	$\chi^2=1.86$; 0.395
- Substance use	67 (38.7)	82 (31.1)	184 (39.0)	$\chi^2=5.05$; 0.080
- Suicidal ideation	6 (3.5)	8 (3)	22 (4.6)	$\chi^2=1.33$; 0.513
- Attempted suicide	12 (6.9)	16 (6.1)	34 (7.2)	$\chi^2=0.36$; 0.835
- Any suicidal behavioura	18 (10.4)	24 (9.1)	56 (11.8)	$\chi^2=1.41$; 0.494
- Behavioural disorder	16 (9.2)	33 (12.5)	39 (8.2)	$\chi^2=3.49$; 0.175
- Anxiety symptoms	19 (10.9)	26 (9.8)	49 (10.4)	$\chi^2=0.14$; 0.929
- Sleep problems	16 (9.2)	26 (9.8)	31 (6.5)	$\chi^2=2.86$; 0.239
- Administrative	13 (7.5)	31 (11.7)	49 (10.4)	$\chi^2=2.06$; 0.357
- Other	8 (4.6)	33 (12.5)	42 (8.9)	$\chi^2=7.86$; 0.020*
Axis II diagnoses (%)				
- Without diagnosis	121 (69.9)	162 (61.3)	288 (61.1)	$\chi^2=4.56$; 0.102
- Cluster B	52 (30.1)	102 (38.6)	180 (38.2)	$\chi^2=4.171$; 0.124
- Cluster C	0 (0)	0 (0)	3 (0.6)	F=2.793; 0.248
Without prior follow-up (%)	44 (25.4)	64 (24.2)	163 (34.6)	$\chi^2=10.66$; 0.005*
Discharge referrals (%)				
- Psychiatry admission	33 (19.6)	53 (20.7)	87 (18.5)	$\chi^2=2.08$; 0.601
- Home referral	140 (80.4)	211 (79.6)	384 (81.5)	

Note. ^aIncludes suicidal ideation and attempted suicide.

Abbreviations: SD = standard deviation; SE = state of emergency; TC = treatment centre; χ^2 = chi-square; t = Student's t; * = $p < 0.001$.

Table 2. *Characteristics of hospital admissions for substance use disorder and post-discharge survival analysis.*

	Pre-pandemic (N = 33)	State of emergency 1 (N = 53)	Statistical test; p
% of total during period	33/163 (20.2)	53/235 (22.5)	$\chi^2=0.29$; 0.582
Substances (%)			
- Alcohol	4 (12.1)	3 (5.7)	F=1.12; 0.287
- Others	29 (87.9)	50 (94.3)	
Women (%)	10 (30.3)	15 (28.3)	$\chi^2=0.04$; 0.842
Age (SD)	38.7 (15.4)	36.1 (12.9)	t=0.861; 0.392
Marital status (%)			
- Single	19 (57.6)	24 (45.3)	$\chi^2=1.75$; 0.193
- Partner	11 (33.3)	21 (39.6)	$\chi^2=1.01$; 0.884
- Separated	2 (9.1)	7 (13.2)	F=3.28; 0.426
- Widowed	0 (0)	1 (1.9)	-
Home living arrangement			
- Living alone	15 (45.5)	17 (32.1)	$\chi^2=0.31$; 0.618
- Living with family	17 (51.5)	33 (62.3)	$\chi^2=0.15$; 0.729
- Institution	1 (3)	3 (5.7)	F=1.31; 0.239
Without prior follow-up (%)	22 (66.7)	42 (79.2)	$\chi^2=1.74$; 0.194
Axis II diagnoses (%)			
- Without diagnosis	21 (63.6)	38 (71.7)	$\chi^2=0.59$; 0.612
- Cluster B	12 (26.4)	15 (28.3)	$\chi^2=0.51$; 0.468
- Cluster C	0 (0)	0 (0)	-
Type of admission			
- Voluntary	13 (46.4)	19 (44.2)	$\chi^2=0.03$; 0.853
- Involuntary	15 (53.6)	24 (55.8)	
Nº of previous admissions	3.4 (4.8)	3.7 (7.2)	t=-0.20; 0.837
Length of stay (days)	17 (13)	11 (10)	t=2.14; 0.035*
Discharge referral (%)			
- Home	16 (57.1)	36 (83.7)	$\chi^2=5.46$; 0.047*
- Subacute care	8 (28.6)	6 (14)	$\chi^2=1.89$; 0.114
- TC	0	0	-
- Other	4 (14.2)	1 (2.3)	$\chi^2=5.42$; 0.040*
Nº of post-discharge visits to ED mean (SD)	2.3 (8.1)	7.1 (22.4)	U=459.5; 0.678
Post-discharge OUTPATIENT visit			
- Face-to-face	18 (54.4)	23 (43.3)	$\chi^2=1.48$; 0.216
- Telephone	8 (24.2)	10 (18.9)	
Survival analysis			
Mean survival until (95% CI)			
- outpatient visit, days	25.3 (2.7 to 47.8)	12.3 (6.8 to 17.1)	LR=2.58; 0.087
- first visit to ED, days	160.7 (32.6 to 287.3)	41.1 (2.1 to 87.2)	LR=4.24; 0.018*
- readmission, days	239.9 (115.3 to 356.6)	175.2 (118.5 to 231.4)	LR=2.50; 0.161

Note. Abbreviations: SD = standard deviation; TC = treatment centre; χ^2 = chi-square; t = Student's t; U = Mann-Whitney U test; LR = log-rank test; * = p < 0.001.

Supplementary table. *Pairwise comparison of the significant variables from the ANCOVA in Table 1.*

	Pre-pandemic (N = 173)	SE 1 (N = 264)	SE 2 (N = 471)	Statistical test; p
% of total during period	173/697 (24.8)	264/902 (29.2)	471/2212 (21.2)	$\chi^2=22.92$; <0.001* PP vs EA1; 0.038* PP vs EA2; 0.056 EA1 vs EA2; <0.001*
Alcohol (%)	17 (9.8)	18 (6.8)	94 (20)	$\chi^2=27.32$; <0.001* PP vs EA1; 0.626 PP vs EA2; 0.021* EA1 vs EA2; 0.002*
Age (SD)	37.2 (11.6)	35.2 (12.06)	37.5 (12.0)	$t=-2.45$; 0.023* PP vs EA1; <0.001* PP vs EA2; 0.046 EA1 vs EA2; 0.011*
Single (%)	94 (56.2)	165 (63.2)	223 (50.1)	$\chi^2=15.73$; <0.001* PP vs EA1; 0.302 PP vs EA2; 0.048* EA1 vs EA2; 0.003*
Separated (%)	27 (16.1)	31 (11.8)	96 (21.9)	$\chi^2=9.24$; 0.010* PP vs EA1; 0.051 PP vs EA2; 0.566 EA1 vs EA2; 0.027*
Psychotic symptoms (%)	12 (6.9)	9 (3.4)	11 (2.3)	$\chi^2=7.89$; 0.019* PP vs EA1; 0.041* PP vs EA2; 0.015* EA1 vs EA2; 0.302
Other reasons for visit (%)	8 (4.6)	33 (12.5)	42 (8.9)	$\chi^2=7.86$; 0.020* PP vs EA1; 0.012* PP vs EA2; 0.035* EA1 vs EA2; 0.048*
Without prior follow-up (%)	44 (25.4)	64 (24.2)	163 (34.6)	$\chi^2=10.66$; 0.005* PP vs EA1; 0.524 PP vs EA2; <0.001* EA1 vs EA2; 0.002*

Note. Abbreviations. SD = standard deviation; SE = state of emergency; * = $p < 0.001$.

depends on frequent social interactions to a greater extent than in the case of older adults (Carstensen, 1992).

Conversely, in the second state of emergency, we identified an increase in visits due to specific problems with the use of alcohol compared to other toxins. Several studies have reported an increase in alcohol use in society during lockdown (Vanderbruggen et al., 2020). Visits from patients not previously linked to the mental health network also increased during this period. Several hypotheses allow us to interpret this increase in alcohol use in the longer lockdown period since the contexts of alcohol use and the reasons for drinking may have changed during the pan-

demic (Patrick et al., 2022). A study examining change in drinking motives among the general population reported COVID-related increases due to depression and coping motives, as well as decreases in social, enhancement, and conformity motives (Graupensperger et al., 2021). Despite this, we did not find significant results in terms of diagnosis. Regarding sociodemographic aspects, we did observe an increase in separated patients and a decrease in singles in the second state of emergency. It has been reported in the literature that social support can reduce internalized stigma and improve mental health among people with substance use disorder problems (Birtel, Wood & Kempa,

2017). This is consistent with other findings showing that spouses, as well as other family members and friends, can be protective factors for substance users (Gariépy, Honkanieni & Quesnel-Vallée, 2016).

Despite the fact that substance use disorder can be closely related to psychosis (Moggi, 2018), the number of patients with substance use disorders who presented psychotic symptoms decreased during both lockdown periods.

Regarding patients admitted for substance use disorder, their average stay during the first state of emergency decreased significantly, and home referral on discharge predominated over referrals to treatment centres to consolidate cessation. This is in contrast with results of other international studies showing the need to maintain treatment processes when dealing with a population which is vulnerable due to substance use, social precariousness, and medical comorbidity (Chacon et al., 2021). Consistent with the COVID-related difficulties in maintaining optimal continuity of care, we identified a post-discharge return to the psychiatric ED in a shorter time than in periods prior to the pandemic, this being more predominant in women users than in men users. This aspect has already been reported in a Spanish study in which 21,207 subjects participated, revealing that sex-related factors were associated with alcohol use as a coping strategy during the pandemic [women, OR = 0.600, $p < 0.001$] (Martínez-Cao et al., 2021).

Limitations and strengths

Some limitations should be taken into account when interpreting the results of this study. First, the data presented here come from the digital clinical history, and we have based ourselves on the clinical diagnoses of different psychiatrists. However, given its single-centre study nature, the common clinical criterion among all the psychiatrists working in our emergency department supports the internal validity of the results. Second, rather than validated measures of symptom severity, we used 'hospital admission' as a logical measure of disease severity. While this measure increases the clinical transferability of our results, they may have been affected by hospital logistics during the pandemic. Third, this sample is representative of a population benefiting from secondary care services, and the results may not be generalizable to patients requiring primary care services. Fourth, the observed two-month period prior to the pandemic may be short despite being representative of the pre-pandemic situation. Fifth, it was not possible to detail the type of substance use in full. Finally, this is a cross-sectional study based on a single-centre ED and no causal inferences can be made. As a strength of the study, we were able to obtain a representative sample of all substance use related psychiatric emergencies treated in the province, extracting relevant data of clinical and care interest to allow other models of care to be designed in future health crisis situations.

Conclusion

Consultations for substance use disorder increased during the first state of emergency, with patients being younger and seeking help because of outpatient discontinuity, while the second state of emergency saw a renewed rise in alcohol use among people without prior treatment and with reduced social networks. Admissions during the first state of emergency were shorter, without subsequent referral to other detoxification treatment centres and with an earlier return to the ED, especially in female users.

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Conflict of interests

The authors declare no conflicts of interest.

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