

Severe COVID-19 cases among patients admitted to treatment for alcohol and drug use disorders in Catalonia

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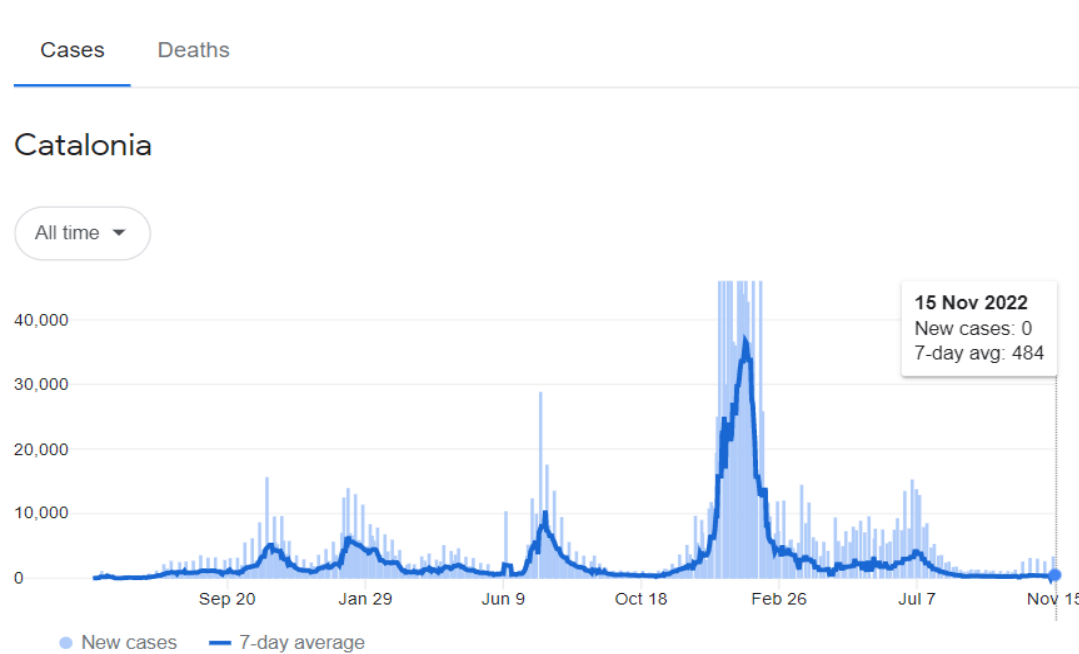
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Background

Covid-19 in Catalonia (March 2020 - Nov 2022) (Johns Hopkins University, JHU)

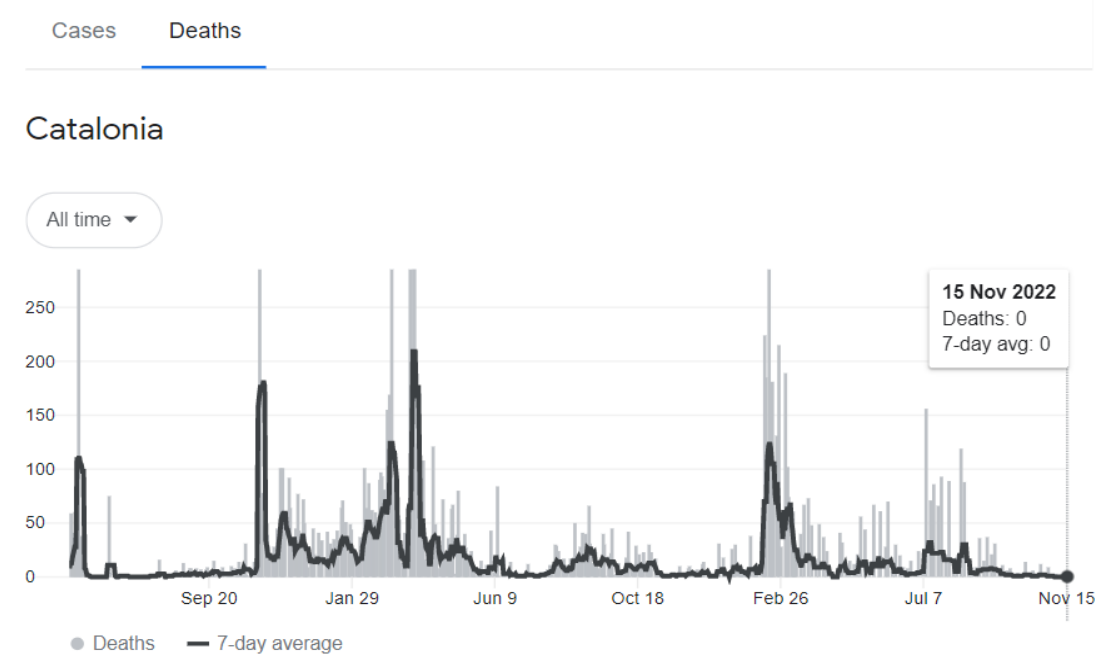
COVID-19 new cases



All-time cases and deaths

Total cases
2.65M

COVID-19 deaths



All-time cases and deaths

Total cases
2.65M

Total deaths
20,551

Background

In general, people with substance use disorder (SUD) are **more likely** to suffer cardiac, pulmonary, metabolic and immune diseases [1-3].

Early studies carried out during 2020 confirmed that people with SUD, especially those diagnosed with opioid, alcohol, cocaine or tobacco abuse have a **greater risk of COVID-19 diagnosis and COVID-19 related hospitalisation and death**, compared to the general population [4,5].

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3. Baborik AL et al. Alcohol, cannabis, and opioid use disorders, and disease burden in an integrated health care system. J Addict Med. 2017.
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5. Wei Y & Shah R. Substance use disorder in the COVID-19 pandemic: A systematic review of vulnerabilities and complications. Vol. 13, Pharmaceuticals. 2020

Background

In addition, people with SUD have **worse** socioeconomic conditions, including **homelessness, imprisonment, and more risky behaviours** such as sharing drug using equipment [5].

This group also live with the effects of **stigma** and face more **barriers** to accessing the health system [6], which can in turn, create a greater risk of exposure to COVID-19 and to suffering more clinical complications.

5, Wei Y, Shah R. Substance use disorder in the COVID-19 pandemic: A systematic review of vulnerabilities and complications. Vol. 13, Pharmaceuticals. 2020. p. 1-29.

6, Baillargeon J, E P, Y-F; K, MA. R. The impact of Substance Use Disorder on COVID-19 O. Psychiatr Serv. 2020;72:578-81.

Background

Previous evidence

Table 1. Odds of adverse COVID-19 outcomes by SUD and overdose history

SUD history	COVID-19 positive		Hospitalization		ICU admission		Death	
	OR (95% CI)	AOR (95% CI)	OR (95% CI)	AOR (95% CI)	OR (95% CI)	AOR (95% CI)	OR (95% CI)	AOR (95% CI)
Any SUD	1.26 (1.14–1.40)**	1.01 (0.91–1.13)	4.80 (3.76–6.12)**	4.35 (3.30–5.73)**	3.23 (2.54–4.09)**	2.50 (1.92–3.25)**	1.57 (1.17–2.10)*	1.23 (0.87–1.73)
AUD	1.18 (1.01–1.37)	0.93 (0.79–1.09)	6.67 (4.51–9.88)**	6.68 (4.33–10.33)**	3.20 (2.29–4.48)**	2.61 (1.80–3.79)**	1.20 (0.76–1.90)	0.91 (0.53–1.57)
OD	1.32 (1.03–1.68)	1.01 (0.78–1.31)	5.46 (2.99–9.99)**	4.58 (2.35–8.95)**	3.02 (1.74–5.24)**	2.60 (1.42–4.79)*	1.59 (0.81–3.12)	1.38 (0.61–3.12)
CAUD	1.03 (0.81–1.30)	0.92 (0.72–1.17)	3.60 (2.14–6.08)**	5.14 (2.92–9.04)**	1.13 (0.54–2.36)	1.22 (0.56–2.64)	0.54 (0.20–1.49)	0.89 (0.29–2.72)
COUD	1.19 (0.86–1.65)	0.84 (0.60–1.18)	2.57 (1.33–4.99)*	1.78 (0.85–3.74)	1.04 (0.37–2.92)	0.57 (0.17–1.93)	0.77 (0.24–2.50)	0.64 (0.14–2.84)
History of OD	1.88 (1.48–2.40)**	1.49 (1.16–1.91)*	9.02 (4.49–18.12)**	5.40 (2.55–11.45)**	7.70 (4.85–12.23)**	5.00 (3.02–8.30)**	4.94 (3.04–8.03)**	3.03 (1.70–5.43)**

AUD: Alcohol use disorders
 OUD: Opioid use disorders
 CAUD: Cannabis use disorders
 COUD: Cocaine use disorders
 OD: Overdose

Background

Previous evidence

Table 2. Hospitalization, ventilator use and mortality—within 21 days of COVID-19 among SUD versus non-substance use disorder

Characteristics	Matched on demographics, obesity and diabetes					Matched on demographics and comorbidities ^b				
	No Substance Use Disorder N = 5,562		Substance Use Disorder N = 5,562		<i>P</i> ^a	No Substance Use Disorder N = 5,450		Substance Use Disorder N = 5,450		<i>P</i> ^a
	N	%	N	%		N	%	N	%	
Hospitalization	1152	20.71	1808	32.51	1.84 1.69, 2.01	1,231	22.59	1,682	30.86	1.53 1.40, 1.65
Ventilator use	235	4.23	334	6.01	1.45 1.22, 1.72	233	4.28	294	5.40	1.28 1.07, 1.52
Death	210	3.78	270	4.85	1.30 1.08, 1.56	256	4.70	257	4.72	1.00 0.84, 1.20

Objective

The objective of this study is to assess severe cases of COVID-19 among patients admitted to treatment for SUD in Catalonia between 2018 and 2019

Methods

Type of study: Observational retrospective

Population: People who initiated a substance-use treatment between Jan. 1st, 2018, to Dec 31st, 2019

Sources of information:

- Drug dependencies System of information of Catalonia (SIDC)
- Catalan Health Surveillance System (CHSS)

Variables:

Independent:

Main substance for which treatment was sought: Alcohol, Cocaine, Cannabis, Heroin

Sex: Men, Women

Age: continuous and categorical (≤ 30 , 31-40, 41-50, ≥ 51)

Country of birth: Spain, Other

Housing: Stable, Homeless, Institutionalized

Comorbidity index: Adjusted morbidity group (AMG) (Categorical: Baseline, Low, Moderate, High)

Outcomes:

Severe cases: Hospitalization/ICU admission/Deaths (between 25 Feb. 2020 and 31 Dec. 2020)

Analysis:

Logistic regression models: Severe COVID-19 (Odds Ratio[OR]) by independent variables

Results

Between 2018 and 2019,
23 092 people initiated
treatment for substance
abuse or dependence

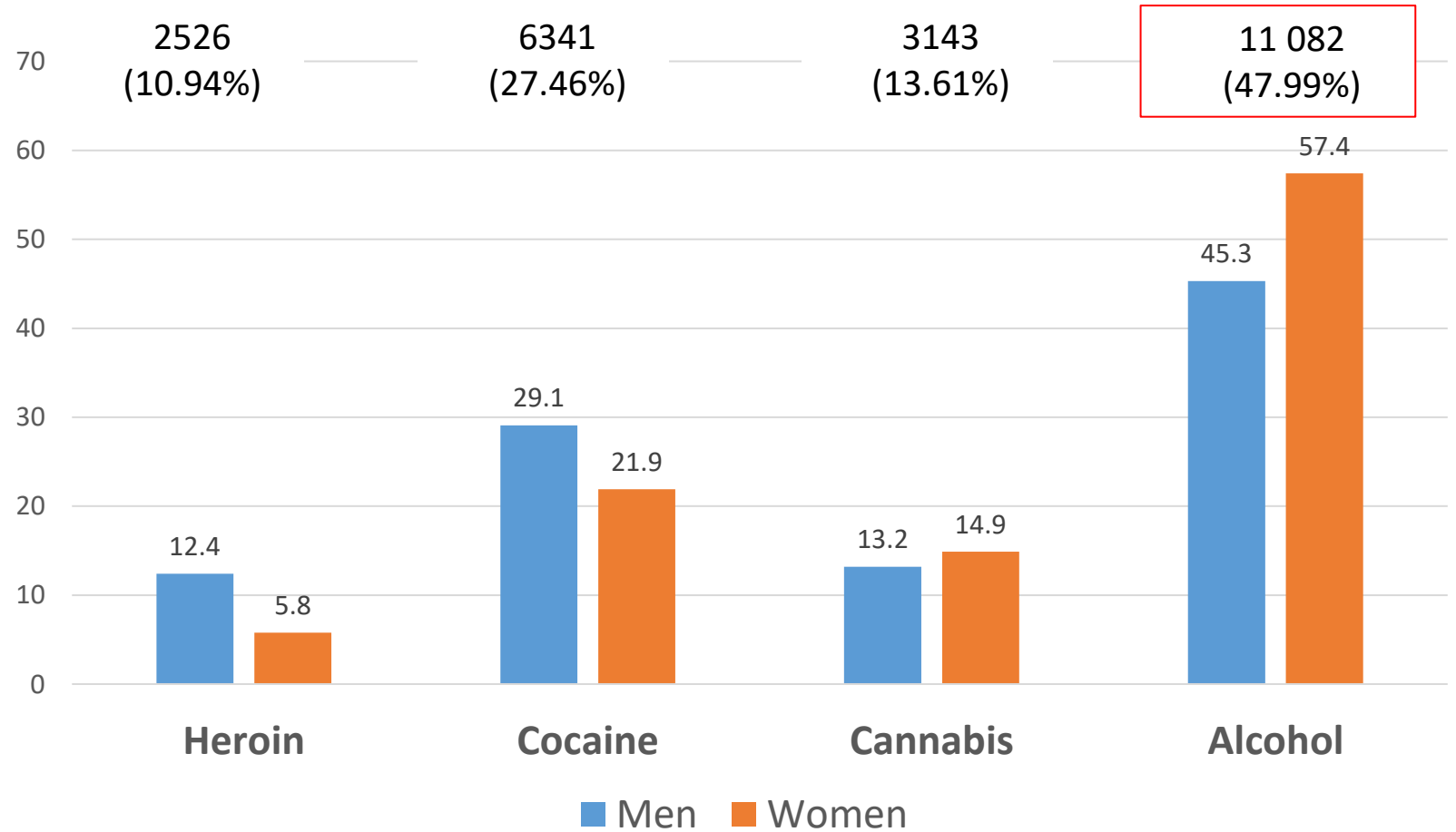
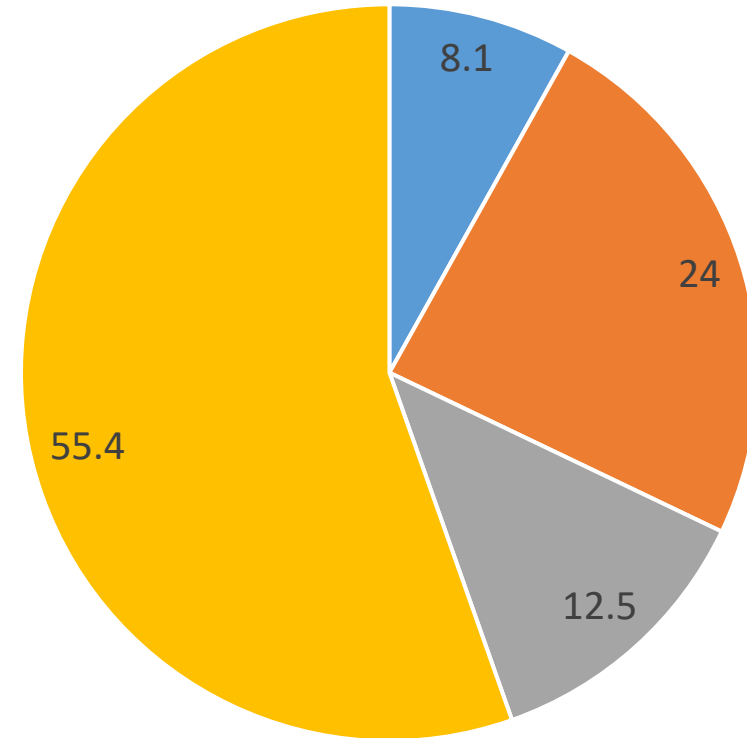


Fig 1. Substance use treatments by type of drug and sex

Results

601 cases of COVID-19 were registered between 25 Feb. 2020 and 31 Dec. 2020 (2.6%) among the 23 092 people who initiated SUD treatment



■ Heroine ■ Cocaine ■ Cannabis ■ Alcohol

Heroin, 49 cases (n=2526), 1.9%

Cocaine, 144 cases (n=6341), 2.3%

Cannabis, 75 cases (n=3143), 2.4%

Alcohol, 333 cases (n=11082), 3%

Results

Table 1. Cases of COVID-19 by sociodemographic variables, HIV, comorbidities and type of drug of treatment, Feb 2020 – Dec 2020

Variables	All cases, n=601 100%	Not severe, n=477 79.4%	Hospitalized, n=97 16.1%	ICU, n=10 1.7%	Deaths n=17 2.8%
Age (Median)	43.3	41.91	49.8*	50.76*	59.50*
Sex (%)					
Men	76.7	76.1	80.4*	70.0	76.5
Women	23.3	23.9	19.6	30.0	23.5
Drug %					
Heroin	8.1	8.2	7.2*	0	5.9
Cocaine	23.9	26.4	13.4	20.0	5.9
Cannabis	12.5	13.3	9.3	10.0	0
Alcohol	55.4	52.1	70.1	70.0	88.2*
Country of birth (%)					
Spain	71.5	72.6	63.9	60.0	82.3
Outside Spain	28.5	27.4	36.1	40.0	17.6

* Differences are statistically significant, p-value=<0.05

Results

Table 1. Cases of COVID-19 by sociodemographic variables, HIV, comorbidities and type of drug of treatment (continuation)

Variables	All cases, n=601 100%	Not severe, n=477 79.4%	Hospitalized, n=97 16.1%	UCI, n=10 1.7%	Deaths, n=17 2.8%
Housing (%)					
Stable	85.2	85.5	83.5	60*	88.2
Homeless	10.0	9.7	11.3	40	11.8
Institutionalized	4.8	4.8	5.2	0	0
HIV					
Not diagnosed	93.7	93.6	93.8	90	100
Diagnosed	6.3	6.4	6.2	10	0
AMG (comorbidities, %)					
Baseline risk	10.3	11.3	6.2*	10*	0*
Low risk	39.8	43.0	24.7	30	5.9
Moderate risk	34.6	35.9	30.9	20	29.4
High risk	15.2	9.8	38.1	40	64.7

Results

Table 2. Unadjusted and adjusted OR of severe cases of COVID-19 by sociodemographic variables, HIV, comorbidities and type of drug of treatment

Variable	Unadjusted OR, 95% CI	Adjusted OR, 95% CI
Sex, men	Ref.	Ref.
Women	0.80 (0.47 – 1.35)	0.71 (0.40 – 1.26)
Age group, <=30 years	Ref.	
31 – 40 years	1.06 (0.46 – 2.46)	0.97 (0.38 – 2.43)
41 – 50 years	1.41 (0.63 – 3.12)	1.23 (0.50 – 3.03)
50 => years	4.19 (2.03 – 8.63)	1.99 (0.80 – 4.90)
Type of drug, Cocaine	Ref.	
Heroin	1.96 (0.76 – 5.07)	1.37 (0.49 – 3.83)
Cannabis	1.37 (0.55 – 3.37)	2.25 (0.87 – 5.81)
Alcohol	2.87 (1.53 – 5.38)	2.37 (1.18 – 4.75)
Country of birth, Spain	Ref.	
Non-Spanish origin	1.30 (0.85 – 2.11)	2.11 (1.26 – 3.54)
Housing, stable	Ref.	
Homeless	1.22 (0.62 – 2.39)	-
Institutionalized	1.01 (0.37 – 2.74)	-
HIV, not diagnosed	Ref.	
Positive	0.88 (0.36 – 2.18)	-
AMG, Baseline risk	Ref.	
Low risk	1.13 (0.44 – 2.89)	1.14 (0.44 – 2.97)
Moderate risk	1.57 (0.62 – 3.97)	1.53 (0.58 – 4.07)
High risk	8.02 (3.13 – 20.5)	6.75 (2.38 – 19.17)

Conclusions

This is one of the first population-based studies that analyzed severe cases of COVID-19 among people admitted for substance use disorders (SUD)

Alcohol represent almost the half of the cases admitted for SUD and after adjusting for other confounders it is also associated with an increased risk of severe cases of COVID-19

Along with alcohol, a non-Spanish origin and having a high score in the comorbidity index were associated with severe cases of COVID-19

COVID-19-positive patients with a problematic use of alcohol as well as other comorbidities should be prioritized for COVID-19 clinical management and prevention efforts due to their increased risk of severe outcomes