Variations in suicide attempts attended by an emergency service during the SARS-CoV-2 pandemic

Variaciones en las tentativas de suicidio atendidas en un servicio de urgencias durante la pandemia por SARS-CoV-2

Autores:
Pablo Pino[1], Ainara Blay[2], Oriol Pallàs[1,3], Francina Fonseca[2,4-6], Marta Torrens[2,4-6], August Supervía[1-4].

Author Affiliations:
[1]Servicio de Urgencias, Hospital del Mar, Barcelona, Spain.
[2]Departament de Medicina i Ciències de la Salut (MELIS), Universitat Pompeu Fabra, Barcelona, Spain.
[3]Unitat de Toxicologia del Parc de Salut Mar, Barcelona, Spain.
[4]Institut de Neuropsiquiatria i Addiccions- Parc de Salut Mar, Barcelona, Spain.
[5]Grup de Recerca en Addiccions, Institut Mar d'Investigacions Mèdiques (IMIM), Barcelona, Spain.
[6]Red de Investigación en Atención Primaria en Adicciones (RIAPAD).

Corresponding Author:
August Supervía.
Servicio de Urgencias.
Hospital del Mar.
Pg. Marítim de la Barceloneta, 25-29.
08003 Barcelona, Spain.

E-mail:
asupervia@parcdesalutmar.cat

Ethical Responsibilities:
All authors have confirmed their authorship, the nonexistence of external funding, and the maintenance of confidentiality and respect for patients' rights in the author's responsibilities document, publication agreement, and assignment of rights to Revista Española de Urgencias Emergencias.

Acknowledgments:
The authors would like to thank Xavier Duran, statistician who developed the mathematical models.

Editor in Charge:
Guillermo Burillo Putze.

A suicide attempt is an act in which a person intends to end their life, resulting from complex interactions among various factors, with psychological suffering being prominent. It may occur due to persistent distress or impulsively in critical situations, and there is a known relationship between suicide and certain psychiatric conditions.[1,2] Therefore, the health crisis caused by the SARS-CoV-2 pandemic brought about a series of changes in daily life that impacted both the physical and mental health of individuals.[3] In Spain, a state of alarm was declared on March 14th, 2020, imposing home lockdown that lasted 99 days.[4] This was followed by a progressive reopening, aimed at transitioning toward the so-called "new normal." The psychological consequences of the pandemic may have influenced the suicide attempts attended in emergency departments (EDs), which are often the main entry point for many of these cases.[5-7]

We conducted a retrospective cohort study on suicide attempts attended in the ED of a university hospital from January 2018 to July 2021. Four periods were defined: Pre-pandemic (01/01/2018 to 13/03/2020, 802 days); lockdown (14/03/2020 to 21/06/2020, 99 days); reopening (22/06/2020 to 24/10/2020, 121 days); and new normal (25/10/2020 to 21/07/2021, 269 days).

A total of 656 suicide attempts were recorded, 3 of which resulted in death and were excluded due to missing variables. Of the remaining 653 cases, during the first period there were 413 attempts (rate of 5.51 cases every 10 days); during lockdown, 36 (3.64/10 days); during reopening, 62 (5.12/10 days); and during the new normal, 142 (5.28/10 days). Demographic characteristics are shown in Table 1. The mean age was 39.1 ± 16.2 years, with a predominance of males (67.4%) and Spanish nationality (69.5%).

No significant differences were observed in age, sex, or origin among periods. A total of 84.1% of patients had a previous psychiatric diagnosis, the most frequent being depressive disorder (53.1%). No significant differences were found among periods, except for those with eating disorders (EDis) and autism spectrum disorders (ASD), which predominated during lockdown (16.7% and 11.1%, respectively).

In 56.5% of the population, there was no alcohol or illicit substance use during the suicide attempt. Among those who used substances, polydrug use predominated, especially during lockdown (44.4%). The most prevalent substances were alcohol (10.0%) and cannabis (3.8%).

Alcohol use decreased during lockdown (2.8%), whereas cannabis use increased during both lockdown and reopening (8.3% and 11.3%).

Approximately half of the patients (52.7%) had a previous suicide attempt, with no significant differences between periods.

In Table 2, the variables corresponding to the episodes attended in each period are shown. In 50.2% of cases, the Suicide Risk Code (SRC) was activated — a standardized program that provides emergency care and preventive follow-upfor individuals identified as being at high risk of suicide.[8] The code was activated more frequently during the lockdown (61.1%) and new normal (57.0%) periods. Regarding the method used, the toxicological approach was predominant in all periods (78.6%). The percentage of patients who left a farewell letter was low (4.9%). In most cases (83.9%), no judicial report was issued.

The most prevalent clinical symptomatology was neurological (45.8%), followed by asymptomatic cases (43.3%) and behavioral alterations (10.9%).

The latter were more frequent during lockdown (22.2%), though differences were not statistically significant. Active treatment was required in 40.4% of patients, with activated charcoal (31.2%) and antidotes (15.5%) being the most common interventions.

Table 1. Demographic characteristics and history of patients with suicide attempts

	Pre-pandemic N = 413 n (%)	Lockdown N = 36 n (%)	Reopening N = 62 n (%)	New normal N = 142 n (%)	Total N = 653 n (%)	*P*-value
Age						
Mean (SD)	3,971 (16.74)	40.22 (14.77)	35.47 (15.66)	38.90 (15.15)	39.16 (16.21)	
Median (Q1–Q3)	37 (25-50)	38 (30-48)	30.5 (21-49)	37 (27-50)	37 (26 -50)	
Sex						.546
Male	274 (66.3)	22 (61.1)	42 (67.7)	102 (71.8)	440 (67.4)	
Female	139 (33.7)	14 (38.9)	20 (32.3)	40 (28.2)	213 (32.6)	
Origin						.168
Spain	299 (72.4)	28 (77.8)	41 (66.1)	86 (60.6)	454 (69.5)	
Other European countries	35 (8.5)	5 (13.9)	5 (8.1)	14 (9.8)	59 (9.1)	
Asia	7 (1.7)	1 (2.8%	4 (6.5)	2 (1.4)	14 (2.1)	
Morocco	15 (3.6)	1 (2.8)	1 (1.6)	8 (5.6)	25 (3.8)	
Other African countries	3 (0.7)	0	0	2 (1.4)	5 (0.8)	
Latin America	51 (12.3)	1 (2.8)	11 (17.7)	27 (19.0)	90 (13.8)	
Other	3 (0.7)	0	0	3 (2.1)	6 (0.9)	
Farewell letter						.569
Yes	22 (5.3)	0	3 (4.8)	7 (4.9)	32 (4.9)	
No	391 (94.7)	36 (100.0)	59 (95.2)	135 (95.1)	621 (95.1)	
Previous psychiatric diagnosis						
Any diagnosis	353 (85.5)	30 (83.3)	50 (80.6)	116 (81.7)	549 (84.1)	.623
Depressive disorder	216 (52.3)	21 (58.3)	39 (62.9)	71 (50.0)	347 (53.1)	.328
Anxiety disorder	169 (40.9)	13 (36.1)	20 (32.3)	53 (37.3)	255 (39.1)	.549
EDi	26 (6.3)	6 (16.7)	1 (1.6)	8 (5.6)	41 (6.3)	.029
SUD	150 (36.3)	15 (41.7)	14 (22.6)	50 (35.2)	229 (35.1)	.156
Psychotic disorders	42 (10.2)	7 (19.4)	3 (4.8)	12 (8.5)	64 (9.8)	.118
Personality disorder	121 (29.3)	11 (30.6)	17 (27.4)	33 (23.2)	182 (27.9)	0558
ADHD	13 (3.1)	0	0	4 (2.8)	17 (2.6)	.372
Conduct disorder	8 (1.9)	0	1 (1.6)	4 (2.8)	13 (2.0)	.734
ASD	2 (0.5)	4 (11.1)	2 (3.2)	1 (0.7)	9 (1.4)	< .001
Other diagnoses	27 (6.5)	2 (5.6)	7 (11.3)	5 (3.5)	41 (6.3)	.207
Previous suicide attempt						.848
No	200 (48.4)	15 (41.7)	29 (46.8)	65 (45.8)	309 (47.3)	
Yes	213 (51.6)	21 (58.3)	33 (53.2)	77 (54.2)	344 (52.7)	

EDi: eating disorder; SUD: substance use disorder; ADHD: attention-deficit/hyperactivity disorder; ASD: autism spectrum disorder.

The mean ED stay was 13.2 ± 15.0 hours, with no significant differences among periods. Most patients were discharged (74.7%). Among those admitted, 13.9% were hospitalized in psychiatry and 4.9% in the intensive care unit (ICU). No significant differences were found between periods regarding treatment, ED stay, or disposition.

Our results show that during the lockdown period there was a decrease in ED visits for suicide attempts, later returning to pre-pandemic levels. Most of the patients treated were men with previous psychiatric diagnoses. During lockdown, there was an increase in patients with a history of EDis and ASD, as well as in cannabis use and polydrug consumption among those treated for suicide attempts. A decrease in alcohol use was also observed. Various studies have described the consequences of the COVID-19 pandemic on suicidal behavior. In 2 Spanish studies, a lower number of cases was recorded during the lockdown,[7,9] consistent with the overall reduction in emergency visits during that time. The recovery in the number of consultations for suicide attempts observed in our series after lockdown could also be explained by the increase in total visits. However, unlike other studies,[7] our series showed a higher number of suicide attempts among men. Regarding substance use in patients presenting with suicide attempts, as reported in studies on poisonings in general, a decrease in cases involving alcohol was observed during lockdown,[10,11] followed by a rebound in alcohol and illicit drug use during the new normal period.[11] This may reflect changes in substance supply patterns, due to factors such as the closure of stores and entertainment venues, the increase in online purchases, or other reasons, affecting both legal and illegal substances. Similarly, the increase in suicide attempts during the reopening phase could be a consequence of the psychological repercussions caused by lockdown.[7] Isolation, grief, fear of illness, and job loss, among other factors, undoubtedly impacted the psychological sphere. Of note, the rise in activation of the SRC during lockdown, possibly motivated by the perception of a higher risk of recurrence, given the greater difficulty in ensuring clinical follow-up through usual channels.

Study limitations include its retrospective and single-center design, which prevents extrapolation of results to other regions. Another limitation is that data were not collected for particularly vulnerable groups, such as individuals with prior abuse, migrants,

Table 2. Clinical characteristics, treatment, and outcomes of patients with suicide attempts

	Pre-pandemic N = 413 n (%)	Lockdown N = 36 n (%)	Reopening N = 62 n (%)	New normal N = 142 n (%)	Total N = 653 n (%)	*P*-value
CRS activation						.105
Yes	195 (47.6)	22 (61.1)	28 (45.2)	81 (57.0)	326 (50.2)	
No	215 (52.4)	14 (38.9)	34 (54.8)	61 (43.0)	324 (49.8)	
Method						.685
Toxicological	316 (76.5)	30 (83.3)	53 (85.5)	114 (80.3)	513 (78.6)	
Non-toxicological	55 (13.3)	4 (11.1)	6 (9.7)	16 (11.3)	81 (12.4)	
Combined	42 (10.2)	2 (5.6)	3 (4.8)	12 (8.5)	59 (9.0)	
Substance use						.006
None	235 (56.9)	16 (44.4)	38 (61.3)	80 (56.3)	369 (56.5)	
Polydrug use	121 (29.3)	16 (44.4)	10 (16.1)	37 (26.1)	184 (28.2)	
Alcohol	44 (10.7)	1 (2.8)	5 (8.1)	15 (10.6)	65 (10.0)	
Cannabis	7 (1.7)	3 (8.3)	7 (11.3)	8 (5.6)	25 (3.8)	
Cocaine	3 (0.7)	0	2 (3.2)	1 (0.7)	6 (0.9)	
Other	3 (0.7)	0	0	1 (0.7)	4 (0.6)	
Clinical presentation						
None	171 (41.4)	16 (44.4)	35 (56.5)	61 (43.0)	283 (43.3)	.172
Neurological	197 (47.7)	13 (36.1)	25 (40.3)	64 (45.1)	299 (45.8)	.433
Respiratory	26 (6.3)	2 (5.6)	3 (4.8)	8 (5.6)	39 (6.0)	.968
Cardiovascular	20 (4.8)	2 (5.6)	1 (1.6)	13 (9.2)	36 (5.5)	.123
Digestive	44 (10.7)	5 (13.9)	5 (8.1)	15 (10.6)	69 (10.6)	.841
Behavioral alterations	43 (10.4)	8 (22.2)	4 (6.5)	16 (11.3)	71 (10.9)	.105
Management						
Active treatment	163 (39.5)	16 (44.4)	25 (40.3)	60 (42.3)	264 (40.4)	.897
OTI-MV)	11 (2.7)	1 (2.8)	3 (4.8)	4 (2.8)	19 (2.9)	.823
Gastric lavage	4 (1.0)	0	1 (1.6)	1 (0.7)	6 (0.9)	.863
Activated charcoal	124 (30.0)	14 (38.9)	18 (29.0)	48 (33.8)	204 (31.2)	.606
Antidote	70 (16.9)	2 (5.6)	8 (12.9)	21 (14.8)	101 (15.5)	.289
Time in the ED (hours)						.163
Mean (SD)	12.80 (14.81)	14.17 (13.19)	10.68 (10.74)	15.36 (17.38)	13.23 (15.02)	
Median (Q1–Q3)	7.0 (3.0-17.0)	10.5 (4.5-19.0)	7.5 (3.5-15.0)	10.0 (5.0.-0.5)	8.0 (3.5-18.0)	
Disposition						.733
Discharge home < 12 h	198 (47.9)	17 (47.2)	36 (58.1)	65 (45.8)	316 (48.4)	
Discharge home > 12 h	112 (27.1)	12 (33.3)	9 (14.5)	39 (27.5)	172 (26.3)	
Admission to HU	10 (2.4)	1 (2.8)	3 (4.8)	6 (4.2)	20 (3.1)	
Admission to ICU	22 (5.3)	1 (2.8)	3 (4.8)	6 (4.2)	32 (4.9)	
Admission to PSY	54 (13.1)	5 (13.9)	10 (16.1)	22 (15.5)	91 (13.9)	
Other	17 (4.1)	0	1 (1.6)	4 (2.8)	22 (3.4)	
Judicial report						.445
Yes	65 (15.7)	4 (11.1)	14 (22.6)	22 (15.5)	105 (16.1)	
No	348 (84.3)	32 (88.9)	48 (77.4)	120 (84.5)	548 (83.9)	

CRS: suicide risk code; OTI-MV: orotracheal intubation–mechanical ventilation; UH: hospital unit; ICU: intensive care unit; PSY: psychiatry; ED: emergency department.

Indigenous populations, prisoners, and LGBTQI+ people.[12,13] Nevertheless, we believe that the number of cases analyzed supports the validity of the results obtained.

In conclusion, the COVID-19 pandemic and the associated lockdown were linked to changes in mental health and in substance use frequency and patterns, which could be related to suicide attempts. Differences were observed between periods in terms of psychiatric history, with a higher proportion of individuals diagnosed with ASD, and in substance use, with lower alcohol involvement during lockdown and higher cannabis use. The early detection of suicidal behavior—including its assessment in EDs, study, and identification of risk and triggering factors—is essential to provide an effective response to this major public health problem, which is increasingly prevalent among younger populations.[14]

Note of the editors: This is a BOWMAN-generated English translation of the officially indexed Spanish-language article, which should be cited as Rev Esp Urg Emerg. 2023;2:113-116. In this translated version, the editors have supervised the process; however, it cannot be ruled out that some errors resulting from the artificial intelligence translation process may have gone unnoticed.

REFERENCES

1. Ruggieri V. Autismo, depresión y riesgo de suicidio. Medicina (B. Aires). 2020;80(Supl 2):12-6.
2. Lilian Salvo G, Ramón Florenzano U, Alejandro Gómez CH. Evaluación y manejo inicial de las ideas e intentos de suicidio en atención primaria. Rev Med Chile. 2021;149:913-9.
3. Balluerka Lasa N, Gómez Benito J, Hidalgo Montesinos M, Gorostiaga Manterola A, Espada Sánchez JL, Padilla García JL, et al. Las consecuencias psicológicas de la COVID-19 y el confinamiento. Informe de investigación. 2020. (Accessed 1 August de 2022). Available at: http://hdl.handle.net/10810/45924
4. Real Decreto 463/2020, de 14 de marzo, por el que se declara el estado de alarma para la gestión de la situación de crisis sanitaria ocasionada por el COVID-19. (Boletín Oficial del Estado, núm. 67, de 14 de marzo de 2020).

(Accessed 1 August de 2022). Available at: https://www.boe.es/buscar/doc.php?id=-BOE-A-2020-3692
5. Nogué S, Ruíz J, Carmona J, Milla J. Epidemiología de la tentativa de suicidio en el Servicio de Urgencias. Emergencias. 1989;1:5-8.
6. Vázquez-Lima MJ, Álvarez Rodríguez C, López-Rivadulla Lamas M, Cruz Landeira A, Abellás Álvarez C. Análisis de los aspectos epidemiológicos de las tentativas de suicidio en un área sanitaria desde la perspectiva de un servicio de urgencias. Emergencias. 2012;24:121-5.
7. Benito-Lozano M, Travería-Becker L, Herranz-Duarte I, Criado Gutiérrez I, López Hernández MA. Tentativas suicidas graves asociadas a confinamiento por COVID-19. Rev Esp Urg Emeg. 2022;1:53-4.
8. Mortier P, Vilagut G, Puértolas Gracia B, De Inés Trujillo A, Alayo Bueno I, Ballester Coma L, et al. Catalonia Suicide Risk Code Epidemiology (CSRC-Epi) study: protocol for a population representative nested case–control study of suicide attempts in Catalonia, Spain. BMJ Open. 2020;10:e037365.
9. Hernández-Calle D, Martínez-Alés G, Mediavilla R, Aguirre P, Rodríguez-Vega B, Bravo Ortiz MF. Trends in psychiatric emergency departments visits due to suicidal ideation and suicide attempts during the COVID-19 pandemic in Madrid, Spain. J Clin Psychiatry. 2020;81:20l13419.
10. Llorens N, Brimer B, Molina M. Impacto COVID-19 en el consumo de sustancias y comportamientos con potencial adictivo: encuesta del observatorio español de las drogas y adicciones. Rev Esp Salud Publica. 2021;95:e1-14.
11. Caballero-Bermejo AF, Ortega-Pérez J, Frontera-Juan G, Homar Amengual C, Barceló-Martín B, Puiguriguer-Ferrando J. Intoxicaciones agudas atendidas en un servicio de urgencias. De la prepandemia a la nueva normalidad. Rev Clin Esp. 2022;222:406-11.
12. Barroso Martínez A. Comprender el suicidio desde una perspectiva de género. Rev Asoc Esp Neuropsiq. 2019;39:51-66.
13. Mateos Herrera A, Vivas Herrera S, Pérez-Calvo C, Ruiz-Duet A, Rodríguez Riesco L. Factores de riesgo para el suicidio en población trans: una revisión bibliográfica. Rev Est Socioeducativos. 2022.i10.17
14. Ministerio de Sanidad. Nota de prensa: Carolina Darias anuncia que la línea 024 incluirá un chat para que sea más accesible, especialmente a jóvenes y a adolescentes. Available at: https://www.sanidad.gob.es/gabinete/notasPrensa.do?id=5849.