Acta Medica Young Doctors
ISSN: 3108-4532
Volume 2 Issue 4

Impact of the COVID-19 Pandemic on Suicide-Related Emergency Department Presentations: A Retrospective Cross-Sectional Study from a Turkish Tertiary Care Center

Original Article

Ayşe Tekin[1], Cemil Kavalcı[1], Samiye Kocal[1], Beril Akkuş[1], Gülsüm Kavalcı[2], Fevzi Yılmaz[1], Cihan Bedel[1]

1. Health Science University of Türkiye, Antalya Training and Research Hospital, Emergency Department, Antalya
2. Health Science University of Türkiye, Antalya Training and Research Hospital, Anesthesia Department, Antalya

ABSTRACT

Background: The COVID-19 pandemic has profoundly affected mental health worldwide by increasing psychological distress, social isolation, unemployment, and barriers to healthcare access. These factors may have contributed to changes in suicidal behavior and emergency department (ED) utilization. This study aimed to evaluate the impact of the COVID-19 pandemic on suicide-related ED presentations in a tertiary care hospital in Türkiye.

Methods: This retrospective, cross-sectional study included adult patients (≥18 years) presenting to the emergency department with suicidal ideation or suicide attempts between March 11, 2019, and March 11, 2021. Eligible patients were identified using ICD-10 codes related to intentional self-harm. Demographic characteristics, employment status, marital status, suicide methods, psychiatric history, COVID-19 history, clinical outcomes, and healthcare costs were extracted from electronic medical records. Patients were divided into pre-pandemic (Group 1) and pandemic (Group 2) cohorts. Continuous and categorical variables were compared using appropriate statistical tests, with statistical significance defined as $p < 0.05$.

Results: A total of 750 patients were included, with a mean age of 32.27 ± 11.39 years. During the pandemic, suicide-related ED presentations increased from 0.125% to 0.264% of all ED visits despite a 39.4% reduction in overall emergency department admissions. The relative risk of suicide-related presentation during the pandemic was 2.11 (95% CI: 1.83–2.44; $p < 0.001$). The proportion of male patients increased significantly from 42.9% to 65.6% ($p < 0.001$), while unemployment and single marital status became more prevalent. Drug overdose remained the most common suicide method, although the use of more violent methods, including hanging and self-inflicted sharp object injuries, increased significantly ($p = 0.017$). Patients presenting during the pandemic were more frequently managed with short-term observation and less frequently required intensive care admission ($p < 0.001$). No significant differences were observed in seasonal presentation patterns.

Conclusions: The COVID-19 pandemic was associated with a marked increase in suicide-related emergency department presentations despite an overall decline in emergency department utilization. Significant changes in patient demographics, suicide methods, and clinical outcomes suggest that pandemic-related psychosocial stressors substantially influenced suicidal behavior. These findings emphasize the importance of maintaining accessible mental health services, implementing targeted suicide prevention strategies, and strengthening psychiatric support systems during future public health emergencies.

Keywords: COVID-19; Suicide attempt; Suicidal ideation; Emergency department; Mental health; Pandemic; Self-harm; Retrospective study.

Corresponding: Cemil Kavalcı, Antalya Trainingand Research Hospital, Emergency Department, Antalya, cemkavalci@yahoo.com
Doi: 10.66288/actamedi.2026.97

Acta Medica Young Doctors
ISSN: 3108-4532
Volume 2 Issue 4

Introduction

Suicide is defined as a situation in which a person intentionally harms themselves with the intent to die. It is divided into two categories: completed suicide and suicide attempt. While a completed suicide results in death, a suicide attempt refers to self-harm that does not result in death [1–3]. Many factors play a role in the development of suicidal behavior [2]. Suicide is a global cause of death and disability [4]. According to data from Our World in Data (OWID), 703,220 people worldwide and 2,003 people in Turkey lost their lives to suicide in 2019 [5]. Data from 2019 show that the suicide mortality rate in Turkey was 2.3 per 100,000 people; among men, this rate was 3.6 per 100,000, and among women, it was 1.2 per 100,000 [5].

At the end of 2019, a new coronavirus was identified following a rise in cases of upper respiratory tract infections and pneumonia in Wuhan, a city in China's Hubei province. This disease, which rapidly spread across the country and around the world, was designated as COVID-19 by the World Health Organization (WHO) on March 11, 2020, and declared a pandemic. The disease can present in many different clinical forms, ranging from asymptomatic cases to mild upper respiratory tract infections, pneumonia, acute respiratory distress syndrome (ARDS), and severe pneumonia leading to multiple organ failure [6]. Uncertain information regarding the virus's mode and route of transmission, incubation period, number of infected individuals, and mortality rates is causing uncertainty and fear among the public. Fear increases anxiety and stress levels in healthy individuals and can exacerbate symptoms in those with underlying psychiatric conditions [7]. In past pandemics, the number of people affected psychosocially tended to be higher than the number of infected individuals [8]. In a study conducted in China, nearly half of the participants rated the psychosocial impact of COVID-19 as moderate to severe, and approximately one-third reported moderate to severe anxiety [9]. Individuals infected with COVID-19 may exhibit intense emotions and behaviors such as fear, anger, loneliness, anxiety, and insomnia. Such situations can also trigger depression, panic disorder, psychosis, and paranoia, and may even lead to suicide. In past pandemics, the number of people experiencing psychosocial effects tended to be higher than the number of infected individuals [8]. In a study conducted in China, nearly half of the participants rated the psychosocial impact of COVID-19 as moderate to severe, and approximately one-third reported moderate to severe anxiety [9]. Individuals infected with COVID-19 may exhibit intense emotions and behaviors such as fear, anger, loneliness, anxiety, and insomnia. Such situations can trigger depression, panic disorder, psychosis, and paranoia, and may even lead to suicide [10].

The COVID-19 pandemic has affected all aspects of life, including the economy, education, public health, and health care. Fear and anxiety about contracting the virus, inadequate access to medical care, the negative effects of social distancing and quarantine, job loss, and rising medical costs can negatively impact mental health and may even lead to an increase in suicide attempts and deaths. These psychosocial disturbances and adverse effects may have influenced suicide attempts. In our study,

Corresponding: Cemil Kavalcı, Antalya Trainingand Research Hospital, Emergency Department, Antalya, cemkavalci@yahoo.com
Doi: 10.66288/actamedi.2026.97

we aimed to investigate the impact of COVID-19 on suicidal thoughts or attempts.

Materials and Methods

Study Design

This thesis study, conducted at a single center, was designed as a descriptive, cross-sectional, retrospective study. Approval was obtained from the Ethics Committee of Antalya Training and Research Hospital, University of Health Sciences, on November 24, 2022 (Decision No. 2022-325/21/17; see Appendix 1). Our study was conducted in accordance with the principles of the Declaration of Helsinki and Good Clinical Practice. The study was conducted between March 11, 2019, and March 11, 2021 (one year before the pandemic and one year during the pandemic) on patients who presented to our hospital with suicidal ideation, suicide attempts, and completed suicides. Patients aged 18 and older who presented to our hospital's emergency department due to suicidal ideation and/or a suicide attempt during the specified dates were included in the study. Patients under the age of 18 were excluded from the study.

Data Collection

Patients who presented to our hospital's emergency department between March 11, 2019, and March 11, 2021, with suicidal ideation or an attempted suicide and who had the following ICD-10 diagnostic codes were included in our study (X65: Exposure to alcohol and intentional self-harm, X61: Exposure to antiepileptic, sedative-hypnotic, antiparkinsonian, and psychotropic drugs, or intentional self-harm, X83-84: Self-harm involving vehicles, X70: Self-harm by hanging or drowning, X74: Self-harm by firearm discharge, X77: Self-harm by heat, hot steam, and hot objects, X76: Self-harm by smoke, fire, and flames, X67: Exposure to gases and other substances and self-harm, X81: Self-harm by jumping from or falling against a moving object, X78: Self-harm with a sharp object, X69: Self-harm due to exposure to chemicals and hazardous substances, X79: Self-harm with a blunt object, X60: Intentional self-harm involving non-opioid analgesics, antipyretics, and antirheumatic drugs, X66: Exposure to organic solvents and halogenated hydrocarbons and their vapors, and self-harm, X63: Exposure to other drugs affecting the autonomic nervous system, and self-harm, X75: Self-harm involving explosive substances, X68: Exposure to pesticides and intentional self-harm, X71: Self-harm by drowning or submersion in water, X72: Self-harm with a firearm, X64: Exposure to narcotics, drugs, and biological substances and self-harm, X72: Self-harm with a handgun, X64: Self-harm due to exposure to drugs, medications, and biological substances, X73: Self-harm with a rifled firearm, hunting rifle, or heavy weapon, X80: Self-harm by jumping from a high place).

The data collection form recorded the patients' age, gender, marital status, employment status, month of suicide, method of suicide, patient outcome, history of psychiatric follow-up, history of COVID-19 isolation, history of COVID-19 infection, and whether they had a history of repeated suicide attempts. After the patients' data were collected, the patients were divided into two groups: those admitted before March 11, 2020 (Group 1,

Corresponding: Cemil Kavalcı, Antalya Trainingand Research Hospital, Emergency Department, Antalya, cemkavalci@yahoo.com
Doi: 10.66288/actamedi.2026.97

the control group) and those admitted after March 11, 2020 (Group 2, the case group); changes in the variables between the groups were analyzed.

Data Analysis

SPSS (Statistical Package for the Social Sciences) version 23.0 was used to analyze the study data. Frequency data were expressed as the number of patients (n) and percentage (%), while continuous data were expressed as mean ± standard deviation and median (interquartile range (IQR)). Normality was assessed using the Kolmogorov-Smirnov test. For continuous variables, the Mann-Whitney U test or the Independent Samples t-test was used to compare two independent groups; for categorical variables, the Pearson chi-square test or Fischer's exact test was used. Data were analyzed at a 95% confidence interval. All hypotheses were formulated as two-tailed, and the alpha critical value was set at 0.05.

Results

Our study included 750 patients who presented to Antalya Training and Research Hospital between March 11, 2019, and March 11, 2021, with suicidal ideation or a suicide attempt. The mean age of the patients was 32.27 ± 11.39 years. In terms of age distribution, the highest number of patients (68.53%, n=514) were between the ages of 18 and 35, followed by those aged 36–50 (24.4%, n=183). 55.9% of the patients (n=419) were male. 54.4% of the patients were employed, and 49.7% were single. In terms of ethnicity, 98.9% of the patients were Turkish. The average cost per patient was 148.39 ± 124.23 TL. Patient characteristics by group are summarized in Table 1.

Table 1. Demographic Characteristics and Healthcare Costs of the Study Population

Variable		Group 1 (n=329)	Group 2 (n=421)	Total (n=750)	P value
Age, median (IQR), years		33.29 (18)	31.47 (14)	30 (15)	0.087
Age group, n (%)	18–35 years	215 (65.4)	301 (71.5)	514 (68.5)	0.195
	36–50 years	85 (25.8)	96 (22.8)	183 (24.4)	
	51–65 years	22 (6.7)	20 (4.8)	42 (5.6)	
	≥66 years	7 (2.1)	4 (1.0)	11 (1.5)	
Sex, n (%)	Male	141 (42.9)	276 (65.6)	417 (55.6)	<0.001
	Female	188 (57.1)	145 (34.4)	333 (44.4)	
Employment status, n (%)	Employed	197 (59.9)	211 (50.1)	408 (54.4)	0.002
	Unemployed	102 (31.0)	183 (43.5)	285 (38.0)	
	Retired	30 (9.1)	27 (6.4)	57 (7.6)	

Corresponding: Cemil Kavalcı, Antalya Trainingand Research Hospital, Emergency Department, Antalya, cemkavalci@yahoo.com
Doi: 10.66288/actamedi.2026.97

Marital status, n (%)	Married	114 (34.7)	108 (25.7)	222 (29.6)	0.006
	Single	143 (43.5)	230 (54.6)	373 (49.7)	
	Divorced	72 (21.9)	83 (19.7)	155 (20.7)	
Previous psychiatric disease history, n (%)		138 (41,95)	245 (58,19)	383 (51.1)	<0,001
Clinical Outcome, n (%)	Discharge	120 (36.5)	229 (54.4)	329 (43.8)	<0.001
	Hospitalized	147 (44.7)	153 (36.3)	300 (40)	
	ICU	57 (17.3)	37 (8.8)	94 (12.5)	
	Death	5 (1.5)	2 (0.5)	7 (0.9)	
Healthcare cost (TL), median (IQR)		136.54 (107.99)	157.65 (155.47)	135.72 (134.95)	0.322

Of the 750 patients included in our study, 43.9% (n = 329) had presented to our hospital with suicidal thoughts or attempts prior to March 11, 2020 -the date the COVID-19 pandemic was declared- (Group 1), while 56.1% (n = 421) had presented after that date (Group 2). While 263,274 patients presented to our hospital's emergency department annually before that date, this number dropped to 159,655 in the subsequent period. The annual rate of patients presenting with suicidal ideation or suicide attempts was 0.125% in the year prior to the COVID-19 pandemic and was found to be 0.264% in the year following the declaration of the COVID-19 pandemic. ($z = -10.39$, $p < 0.0001$, RR = 2.11, 95% CI: 1.83–2.44). The risk of suicide during the COVID-19 period was approximately 2.1 times higher than in the pre-COVID-19 period and was statistically significant. In our study, when the annual number of cases and suicide-related mortality rates were examined, the suicide-related case-fatality rate was 1.89 per 100,000 in the pre-COVID-19 period, while it was found to be 1.25 per 100,000 in the post-COVID-19 period.

We examined the distribution of suicidal thoughts or attempts during the COVID-19 period; although more frequent in the fall, the rates were approximately similar in both periods ($p>0.05$) Figure 1).

Corresponding: Cemil Kavalcı, Antalya Trainingand Research Hospital, Emergency Department, Antalya, cemkavalci@yahoo.com
Doi: 10.66288/actamedi.2026.97

Acta Medica Young Doctors
ISSN: 3108-4532
Volume 2 Issue 4

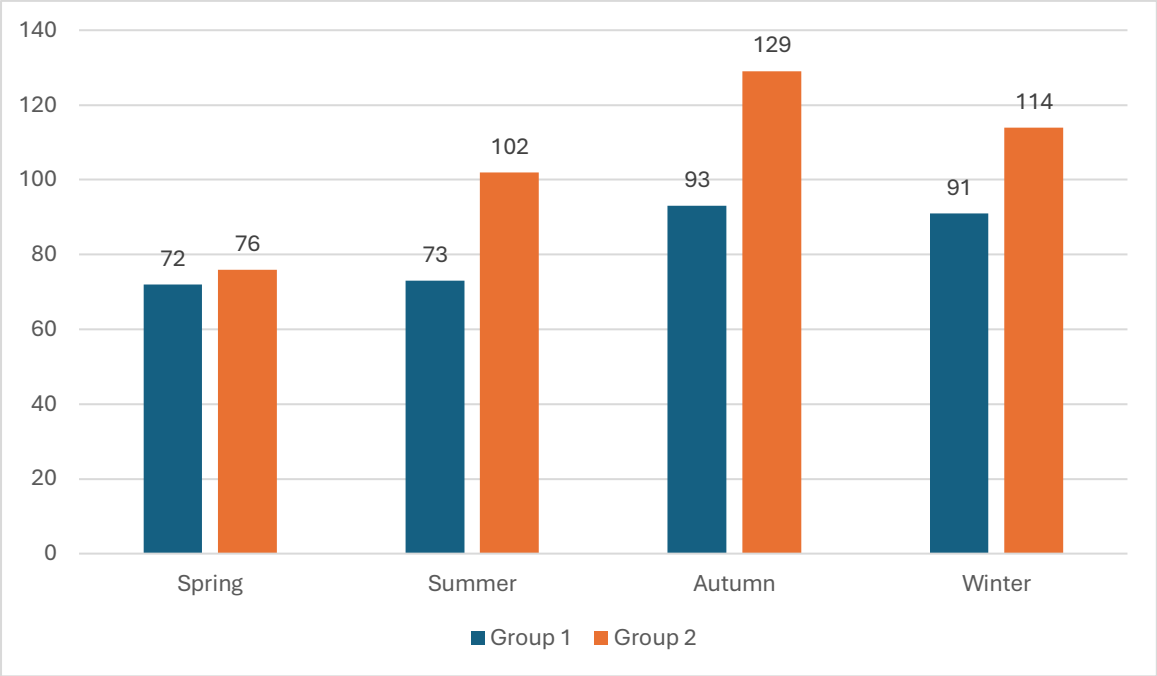

Figure 1. Seasonal Distribution of Suicide-Related Emergency Department Presentations According to Groups

When suicidal ideation/attempt methods were examined according to groups, it was found that the rate of patients presenting with hanging, sharp instrument injury, jumping from a height, and foreign object ingestion was increased in group 2 (p=0.017) Table 2).

Table 2. Comparison of Suicide Methods According to Groups

Suicide Method	Group 1 (n, %)	Group 2 (n, %)	Total (n, %)	P value
Drug overdose	194 (59.0)	209 (49.6)	403 (21.8)	
Hanging	7 (2.1)	19 (4.5)	26 (3.5)	
Self-inflicted injury with a sharp object	17 (5.2)	34 (8.1)	51 (6.8)	
Jumping from height	7 (2.1)	13 (3.1)	20 (2.6)	
Foreign body ingestion	6 (1.8)	18 (4.3)	24 (3.2)	**0.017**
Pesticide/Corrosive substance ingestion	20 (6.1)	13 (3.1)	33 (4.4)	
Suicidal ideation only	73 (22.2)	108 (25.7)	181 (24.1)	
Other methods	5 (1.5)	7 (1.7)	12 (1.6)	

Corresponding: Cemil Kavalcı, Antalya Trainingand Research Hospital, Emergency Department, Antalya, cemkavalci@yahoo.com
Doi: 10.66288/actamedi.2026.97

Discussions

This study demonstrates that the COVID-19 pandemic was a 2.11-fold elevation in suicide risk despite reduced overall ED utilization. Notable demographic shifts included a reversal to male predominance, increased unemployment and single marital status, and concentration among young adults aged 18–35 years.

This retrospective, cross-sectional study provides important evidence of the significant impact of the COVID-19 pandemic on suicide-related emergency department presentations at a single tertiary care center in Turkey. Our findings demonstrate a 2.11-fold increase in suicide risk during the pandemic period (March 2020–March 2021) compared to the pre-pandemic year (March 2019–March 2020), with the proportion of suicide-related visits rising from 0.125% to 0.264% of all ED visits ($p<0.0001$). This increase occurred despite an overall 39.4% reduction in total ED volume, suggesting that the pandemic created unique psychosocial stressors that disproportionately elevated suicide-related crises even as general healthcare-seeking behavior declined. The COVID-19 pandemic has significantly impacted mental health, leading to increased suicide-related presentations in various demographics and regions. In Ireland, a study found a 27% increase in hospital presentations for suicide-related ideation among older adults during the pandemic years compared to the pre-pandemic period, with significant increases observed particularly in 2021[11]. Similarly, in Northern Ireland, while there was a decrease in emergency department (ED) presentations for suicide ideation during the initial lockdown, those who did present were less likely to engage in subsequent self-harm compared to pre-pandemic times[12]. In Toronto, Canada, although the number of self-harm presentations did not increase during the early pandemic, the proportion of such cases relative to total ED presentations rose, with economic stressors and severe injuries being notable factors[13]. In Spain, during the national lockdown, the proportion of suicide-related presentations increased despite an overall decrease in ED visits, with more individuals presenting alone and with a family history of suicide[14]. Among adolescents, there was a notable increase in presentations for suicide-related thoughts and behaviors, particularly affecting gender expansive youth due to the loss of specific services[15]. The pandemic also saw a rise in psychiatric admissions following suicidal presentations, attributed to more severe cases and possibly reduced community services [16]. Substance use was identified as a contributing factor to increased self-harm and suicide-related ideation presentations in Ireland during the pandemic [17]. Youth presentations for suicidality also increased, with a significant rise in overdose-related cases[18]. In Berlin, suicidality increased during the first wave of the pandemic, particularly among patients with substance use disorders and borderline personality disorder [19]. Finally, in Spain, there was a sustained increase in suicide ideation and self-harm behaviors among children and adolescents post-pandemic, with a marked rise in females and those with prior mental health issues [20]. The paradoxical increase in suicide-related visits amid declining overall ED utilization observed in our study has been documented elsewhere and likely

Corresponding: Cemil Kavalcı, Antalya Trainingand Research Hospital, Emergency Department, Antalya, cemkavalci@yahoo.com
Doi: 10.66288/actamedi.2026.97

reflects multiple mechanisms. Fear of COVID-19 infection, public health messaging to avoid hospitals for non-urgent conditions, and lockdown restrictions may have deterred individuals from seeking routine care, while the severity and acuity of mental health crises during the pandemic necessitated emergency intervention [12] This pattern suggests that the pandemic's psychosocial impact was sufficiently severe to overcome barriers to healthcare access that reduced ED utilization for other conditions.

Demographic shifts in gender, employment, and marital status reveal complex interrelations and evolving trends across different contexts. In the United States, job tenure trends have diverged by gender, with married mothers experiencing increased job tenure, while men and never-married women have seen declines, influenced by shifts in industry and occupational composition[21]. Marital status and gender also significantly impact employment decisions, with studies showing that single lesbian women receive higher ratings compared to their married counterparts, and married heterosexual women are favored over single heterosexual women, highlighting the nuanced interplay of marital status and sexual orientation in hiring biases[22]. In Nigeria, during the COVID-19 lockdown, marital status and employment status were found to directly affect mental health, with married individuals and those officially employed reporting better mental health outcomes[23]. Among older adults in the U.S., marital transitions such as divorce and widowhood have become more common, reflecting broader societal changes and impacting the demographic composition of this age group[24]. In Israel, marital status continues to influence economic vulnerability, with unmarried women, particularly those divorced or widowed, facing greater financial disadvantages compared to their married counterparts[25,26]. The twentieth century saw significant shifts in women's roles, with increased participation in the workforce and higher education levels, reducing the impact of race and marital status on employment rates[27]. These demographic changes are further underscored by the transition to adulthood, where economic transformations have affected marriage rates and family patterns, particularly among black men and women, with an increase in single parenthood among women[28]. Collectively, these studies illustrate the intricate dynamics of gender, employment, and marital status, highlighting ongoing societal transformations and their implications for economic and social structures. One of the most striking findings in our study was the significant gender shift in suicide-related presentations. Pre-pandemic, women comprised 57.15% of cases, consistent with typical patterns in many settings where women attempt suicide more frequently than men. However, during the pandemic, men represented 65.55% of cases ($p<0.001$), a reversal that warrants careful consideration. The gender reversal in our Turkish sample may reflect culturally specific responses to pandemic-related stressors, particularly economic disruption and unemployment, which may have differentially affected men in this context.

The COVID-19 pandemic has significantly impacted the mental health of young adults, leading to increased vulnerability to suicide.

Corresponding: Cemil Kavalcı, Antalya Trainingand Research Hospital, Emergency Department, Antalya, cemkavalci@yahoo.com
Doi: 10.66288/actamedi.2026.97

Studies indicate that young adults, particularly those aged 18 to 39, have experienced heightened rates of suicidal ideation and attempts during the pandemic. In South Korea, an analysis of emergency room visits revealed an increasing trend in suicidality among young adults aged 20-39 following the pandemic's onset, highlighting their vulnerability to mental health crises during this period [29]. Globally, young adults aged 18-44 have been identified as a high-risk group for suicidal behaviors, with factors such as low social support, depression, anxiety, and pandemic-related stressors exacerbating their risk[2]. In Canada, the prevalence of suicidal ideation among young adults aged 18-34 increased from 4.2% in fall 2020 to 8.0% in spring 2021, with the highest rates observed in those aged 18-24, particularly in materially deprived areas[30]. In the United States, youth suicides increased during the pandemic, with significant variations observed across different demographic groups, including young adults aged 18-24[31]. The Zero Suicide approach has highlighted the importance of tailored interventions for young adults, who reported lower rates of depression and anxiety but higher rates of past suicide attempts compared to adolescents[32]. In Southeast Iran, young adults aged 19-34 experienced a dramatic increase in suicide rates post-pandemic, emphasizing the need for targeted mental health interventions[33]. Despite these trends, some regions, such as parts of Germany, did not observe a significant increase in suicide rates among young adults during the pandemic, suggesting regional variations in the impact of COVID-19 on youth suicides[34]. Overall, the pandemic has underscored the urgent need for comprehensive mental health strategies to address the increased vulnerability of young adults to suicide, focusing on high-risk groups and mitigating factors such as social isolation and economic hardship[35]. Our finding that individuals aged 18–35 years comprised 68.53% of suicide-related presentations is consistent with international evidence highlighting the disproportionate mental health impact of the pandemic on younger populations. The significant shift in suicide methods during the pandemic ($p=0.017$) provides important insights into changing patterns of suicidal behavior. Drug ingestion decreased from 58.96% to 49.64%, while more violent methods increased: hanging rose from 2.13% to 4.51%, sharp object injury from 5.17% to 8.07%, and foreign body ingestion from 1.82% to 4.28%. The increase in more violent and potentially lethal methods in our sample may reflect several factors. First, the shift toward male predominance during the pandemic may partially explain this pattern, as men typically employ more lethal means. Second, increased severity of psychological distress and hopelessness during the pandemic may have driven individuals toward more definitive methods. Third, lockdown conditions and increased time at home may have altered access to different means; reduced access to healthcare settings may have limited medication availability while increasing exposure to household implements. The increase in foreign body ingestion is particularly notable and may represent a culturally specific pattern or reflect impulsive acts during acute distress.

The COVID-19 pandemic has significantly impacted individuals with both no prior

Corresponding: Cemil Kavalcı, Antalya Trainingand Research Hospital, Emergency Department, Antalya, cemkavalci@yahoo.com
Doi: 10.66288/actamedi.2026.97

psychiatric history and those with pre-existing mental disorders, influencing suicide risk in complex ways. For individuals without a prior psychiatric history, the pandemic has introduced new psychological stressors, such as anxiety, depression, and post-traumatic stress disorder, which can lead to suicidal ideation. A case report highlighted an impulsive suicide attempt by a patient with no psychiatric history following a COVID-19 diagnosis, suggesting that the infection itself, along with the associated psychological and neurological symptoms, may trigger new onset mental illness and increase suicide risk[36]. For those with pre-existing mental disorders, the pandemic has exacerbated symptoms, particularly in individuals with severe mental disorders like schizophrenia, leading to increased depressive and anxiety symptoms, substance use, and suicidal ideation[37]. A study in Germany found a 27.4% increase in potential suicides among patients with severe mental disorders during the pandemic, emphasizing the need for enhanced suicide prevention efforts[38]. A The dramatic increase in patients with prior psychiatric history among suicide attempters (41.95% to 58.19%, $p<0.001$) is one of our most significant findings and aligns closely with international evidence.

The COVID-19 pandemic has influenced the seasonal patterns of suicides, with various studies highlighting changes in trends and seasonality across different demographics and regions. Prior to the pandemic, suicide rates typically exhibited a seasonal pattern, peaking in spring and declining in winter, a trend observed across multiple countries and demographic groups[22]. This pattern is thought to be influenced by factors such as climate, socioeconomic conditions, and demographic characteristics, with variations in amplitude and shape of the seasonal patterns across different communities[32]. During the pandemic, however, these patterns experienced disruptions. For instance, in the U.S., there was a temporary decline in suicidality among children and adolescents during the spring of 2020, coinciding with school closures, suggesting a link between suicidality and the school calendar[31]. In Argentina, the pandemic altered spatio-temporal patterns of suicide, with both increases and decreases in suicide rates observed in different areas[39]. Globally, while some regions like Mexico, Nepal, and Japan saw increases in suicides during specific periods of the pandemic, overall suicide rates remained stable or decreased in many areas[40] Unlike some aspects of suicidal behavior, we found no significant seasonal variation in suicide-related presentations between the pre-pandemic and pandemic periods. Both periods showed relatively consistent distributions across seasons, with slightly higher presentations in autumn and winter. This finding suggests that traditional seasonal patterns in suicidal behavior persisted during the pandemic and that pandemic-related risk factors operated relatively consistently across seasons. However, the lack of seasonal variation may also reflect the sustained nature of pandemic stressors, which persisted throughout the year rather than fluctuating seasonally.

In our study, we examined methods of suicidal thoughts or attempts. When we examined applications before and after COVID-19, we found a significant increase

Corresponding: Cemil Kavalcı, Antalya Trainingand Research Hospital, Emergency Department, Antalya, cemkavalci@yahoo.com
Doi: 10.66288/actamedi.2026.97

in suicide methods such as hanging, self-harm with a sharp object, jumping from a height, and swallowing a foreign object (p=0.017). In the study by Habu et al. on suicides during COVID-19, it was also observed that suicide rates with sharp objects increased in males and suicide rates with chemical substances increased in females during COVID-19 (41). We believe that in the post-COVID-19 period, depression, anxiety, and the belief that individuals cannot recover from the disease may have triggered suicidal thoughts or attempts, and this situation may have led to an increase in violent suicide methods that are more death-focused. Another idea we have is that since access to hospitals or medication decreased due to the prioritization of serious cases in the early stages of the pandemic, it may have triggered suicide through more serious methods.

In our study, we also examined the costs incurred by patients in the hospital and found the average cost to be 148.39±124.23 TL. When comparing the pre- and post-COVID-19 periods, no significant difference was observed in patient costs (p>0.322). We did not find any studies in the literature regarding the cost of hospital-acquired suicide during the COVID-19 period. The reason for the lack of change in patient costs may be that the Social Security Institution did not make any changes to the SUT (Healthcare Services Pricing Regulation) prices during the pandemic.

Conclusion

This study demonstrates that the COVID-19 pandemic was associated with a significant increase in suicide-related emergency department presentations in our Turkish tertiary care setting, with a 2.11-fold elevation in suicide risk despite reduced overall ED utilization. Notable demographic shifts included a reversal to male predominance, increased unemployment and single marital status, and concentration among young adults aged 18–35 years. Changes in suicide methods toward more violent means, increased prevalence of prior psychiatric history, and shifts in clinical outcomes reflect the complex interplay of pandemic-related psychosocial stressors, healthcare system strain, and altered patterns of suicidal behavior. These findings underscore the critical importance of maintaining robust mental health services during public health emergencies and implementing targeted interventions for high-risk populations. As societies continue to navigate the long-term consequences of the pandemic, sustained attention to mental health surveillance, service delivery, and suicide prevention remains essential.

Acknowledge

Cite: Tekin, A., Kavalcı, C., Kocal, S., Akkuş, B., Kavalcı, G., Yılmaz, F., & Bedel, C. (2026). Impact of the COVID-19 Pandemic on Suicide-Related Emergency Department Presentations: A Retrospective Cross-Sectional Study from a Turkish Tertiary Care Center. Acta Medica Young Doctors, 2(4), 73–86.

References

1. Harmancı P. Dünya'daki ve Türkiye'deki intihar vakalarının sosyodemografik özellikler açısından incelenmesi. Hacettepe University Faculty of Health Sciences Journal. 2015;1(1).

Corresponding: Cemil Kavalcı, Antalya Trainingand Research Hospital, Emergency Department, Antalya, cemkavalci@yahoo.com
Doi: 10.66288/actamedi.2026.97

https://dergipark.org.tr/en/download/article-file/88833

2. Ak M, Gülsün M, Özmenler KN. Suicide and Personality. Current Approaches in Psychiatry, 2009;1(1):45-54.

3. Kapur N, Gask L. Introduction to suicide and self-harm. Psychiatry, 2006;5(8):259-62.

4. Klonsky ED, May AM, Saffer BY. Suicide, Suicide Attempts, and Suicidal Ideation. Annual Review of Clinical Psychology. 2016;12(1):307-30

5. Suicides 2023. IHME, Global Burden of Disease. [Available from: https://ourworldindata.org/suicide (last access date: 10.07.2026)

6. Sharma A, Ahmad Farouk I, Lal SK. COVID-19: A Review on the Novel Coronavirus Disease Evolution, Transmission, Detection, Control and Prevention. Viruses, 2021;13(2):202. Doi: 10.3390/v13020202. PMID: 33572857; PMCID: PMC7911532.

7.Shigemura J, Ursano RJ, Morganstein JC, Kurosawa M, Benedek DM. Public responses to the novel 2019 coronavirus (2019-nCoV) in Japan: Mental health consequences and target populations. Psychiatry Clin Neurosci, 2020;74(4):281-2.

8. Reardon S. Ebola's mental-health wounds linger in Africa. Nature. 2015;519(7541):13-4.

9. Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, et al. Immediate Psychological Responses and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China. Int J Environ Res Public Health. 2020;17(5)

10. Ornell F, Schuch JB, Sordi AO, Kessler FHP. "Pandemic fear" and COVID-19: mental health burden and strategies. Braz J Psychiatry. 2020;42(3):232-5.

11.Troya MI, Corcoran P, Arensman E, Kavalidou K. Patterns of Hospital Presenting Suicide-Related Ideation in Older Adults before and during COVID-19: Findings from a National Clinical Service in Ireland 2018-2021. Arch Suicide Res. 2024 Oct-Dec;28(4):1368-1379. Doi: 10.1080/13811118.2024.2307882. Epub 2024 Jan 25. PMID: 38269575.

12. Murphy S, O'Reilly D, Maguire A, Ross E. Suicide ideation and subsequent self-harm: Variations in presentations, care and management during the Covid-19 pandemic. Int J Popul Data Sci. 2023 Sep 14;8(2):2331. Doi: 10.23889/ijpds.v8i2.2331. PMCID: PMC10929528.

13. Poonai N, Freedman SB, Newton AS, Sawyer S, Gaucher N, Ali S, Wright B, Miller MR, Mater A, Fitzpatrick E, Jabbour M, Zemek R, Eltorki M, Doan Q; Pediatric Emergency Research Canada (PERC) Network. Emergency department visits and hospital admissions for suicidal ideation, self-poisoning and self-harm among adolescents in Canada during the COVID-19 pandemic. CMAJ. 2023 Sep 18;195(36):E1221-E1230. Doi: 10.1503/cmaj.220507. PMID: 37722746; PMCID: PMC10506508.

14. Prados-Ojeda JL, Gordillo-Urbano RM, Carrillo-Pérez T, Vázquez-Calvo A, Herrera-Cortés MA, Carreño-Ruiz MÁ, Font-Ugalde P. Suicide Presentations to an Emergency Department Pre and During the COVID Lockdown, March-May 2020, in Spain. Arch Suicide Res. 2022 Jul-Sep;26(3):1336-1348. Doi: 10.1080/13811118.2021.1887023. Epub 2021 Feb 25. PMID: 33631086.

15. Toro GVR, Arias P, de la Torre-Luque A, Singer JB, Lagunas N. Depression, Anxiety, and Suicide Among Adolescents: Sex Differences and Future Perspectives. J Clin Med. 2025 May 15;14(10):3446. Doi: 10.3390/jcm14103446. PMID: 40429440; PMCID: PMC12112747.

16. Adam M, Moran JK, Kippe YD, Schouler-Ocak M, Bermpohl F, Gutwinski S, Goldschmidt T. Increase in presentations with new-onset psychiatric disorders in a psychiatric emergency department in Berlin, Germany during the second wave of the COVID-19 pandemic – a retrospective cross-sectional study. Front Psychiatry. 2023 Oct 12;14:1240703. Doi: 10.3389/fpsyt.2023.1240703. PMID: 37904853; PMCID: PMC10613500.

17. Maguire E, Kavalidou K, Bannan N, Doherty A, Jeffers A. Substance use and self-

Corresponding: Cemil Kavalcı, Antalya Trainingand Research Hospital, Emergency Department, Antalya, cemkavalci@yahoo.com
Doi: 10.66288/actamedi.2026.97

harm emergency department presentations during COVID19: Evidence from a National Clinical Programme for Self-Harm. Irish J Psychol Med, 2023;40(3): 424-429. Doi:10.1017/ipm.2022.36

18. Guinovart M, Cobo J, González-Rodríguez A, Parra-Uribe I, Palao D. Towards the Influence of Media on Suicidality: A Systematic Review of Netflix's 'Thirteen Reasons Why'. Int J Environ Res Public Health. 2023 Mar 27;20(7):5270. Doi: 10.3390/ijerph20075270. PMID: 37047886; PMCID: PMC10094075.

19. Kippe YD, Adam M, Finck A, Moran JK, Schouler-Ocak M, Bermpohl F, Gutwinski S, Goldschmidt T. Suicidality in psychiatric emergency department situations during the first and the second wave of COVID-19 pandemic. Eur Arch Psychiatry Clin Neurosci. 2022;273(2):311–323. Doi: 10.1007/s00406-022-01486-6

20. Gimenez-Palomo A, Fico G, Borras R, Sague-Vilavella M, Gomez-Ramiro M, Fortea A, Fortea L, Vazquez M, Vieta E. Increasing prevalence of self-harm, suicidal behavior and suicidal ideation throughout a three-year period in the context of COVID-19 pandemic in Spain. Psychiatry Res. 2024 Sep;339:116015. Doi: 10.1016/j.psychres.2024.116015.PMID: 38943785.

21. Lachanski, Michael. U.S. Trends in Job Stability by Sex, Race, and Ethnicity from 1996 to 2020. RSF: The Russell Sage Foundation Journal of the Social Sciences. 2025; 11: 224-246. Doi:10.7758/RSF.2025.11.1.11.

22.Nadler J, Kufahl KM. Marital Status, Gender, and Sexual Orientation: Implications for Employment Hiring Decisions. Psychology of Sexual Orientation and Gender Diversity, 2014;1(3):270-278. DOI:10.1037/sgd0000050

23. Lawal AM, Alhassan EO, Mogaji HO, Odoh IM, Essien EA. Differential effect of gender, marital status, religion, ethnicity, education and employment status on mental health during COVID-19 lockdown in Nigeria. Psychol Health Med. 2022;27(1):1-12. Doi: 10.1080/13548506.2020.1865548. PMID: 33351644.

24. Recksiedler C, Stawski RS. Marital Transitions and Depressive Symptoms among Older Adults: Examining Educational Differences. Gerontology. 2019;65(4):407-418. Doi: 10.1159/000493681. PMID: 30481757.

25. Lurie L, Stier H. Marital Status and Gender Inequality in Household Income Among Older Adults in Israel: Changes Over time. Social Indicators Research. 2022;159(2):801-820. Doi: 10.1007/s11205-021-02781-w

26. Lewin AC, Stier H. When Marriage Ends: Differences in Affluence and Poverty Among Older Adults in Israel. European Journal of Population, 2023;39(1):pages 1-20. DOI: 10.1007/s10680-023-09676-1

27. Damaske S, Frech A. Women's Work Pathways Across the Life Course. Demography. 2016;53(2):365-91. Doi: 10.1007/s13524-016-0464-z. PMID: 27001314; PMCID: PMC5074082.

28.Smock PJ, Schwartz CR. The Demography of Families: A Review of Patterns and Change. Journal of Marriage and Family, 2020;82:9–34

29.Park H, Oh MR, Roh EH, Huh YJ, Hong SI, Kim YJ, Kim WY. Trends in Mental Health-Related Emergency Department Visits Among Adolescents and Young Adults: A Nationwide, Population-Based Study in Korea, 2017–2021. J Korean Med Sci. 2025;40(47):e316. https://doi.org/10.3346/jkms.2025.40.e316

30.Liu L, Contreras G, Pollock NJ, Tonmyr L, Thompson W. Suicidal ideation among young adults in Canada during the COVID-19 pandemic: evidence from a population-based cross-sectional study. Health Promot Chronic Dis Prev Can. 2023 May;43(5):260-266. Doi: 10.24095/hpcdp.43.5.05. PMID: 37195655; PMCID: PMC10237260.

31.Bridge JA, Ruch DA, Sheftall AH, Hahm HC, O'Keefe VM, Fontanella CA, Brock G, Campo JV, Horowitz LM. Youth Suicide During the First Year of the COVID-19 Pandemic. Pediatrics. 2023;151(3):e2022058375. Doi: 10.1542/peds.2022-058375. PMID: 36789551; PMCID: PMC10227859.

32.Daniel SS, Goldston DB. Interventions for suicidal youth: a review of the literature and developmental considerations. Suicide Life

Corresponding: Cemil Kavalcı, Antalya Trainingand Research Hospital, Emergency Department, Antalya, cemkavalci@yahoo.com
Doi: 10.66288/actamedi.2026.97

Threat Behav. 2009;39(3):252-68. Doi: 10.1521/suli.2009.39.3.252. PMID: 19606918; PMCID: PMC2819305.

33. Movahed E, Afsharmanesh A, Aqarabi H, Raesi R, Hushmandi K, Daneshi S. Comparison of the trend of suicide before and after the COVID-19 pandemic in Southeast Iran from 2016 to 2023. BMC Public Health. 2025;25(1):66. Doi: 10.1186/s12889-024-21265-3. PMID: 39773728; PMCID: PMC11706065.

34. Radeloff D, Papsdorf R, Uhlig K, Vasilache A, Putnam K, von Klitzing K. Trends in suicide rates during the COVID-19 pandemic restrictions in a major German city. Epidemiol Psychiatr Sci. 2021;30:e16. Doi: 10.1017/S2045796021000019. PMID: 33461639; PMCID: PMC7889841.

35. Parmar V, Arias Castro A, Singh I, Garcia Santiago G, Singh M. Prevalence of Suicide Among Adolescents Before and After the COVID-19 Pandemic. Cureus. 2025;17(11):e97166. Doi: 10.7759/cureus.97166. PMID: 41278042; PMCID: PMC12640266.

36. Kim J, Jackson C, Raai H. An Impulsive Suicide Attempt in a Patient with No Psychiatric History and a Recent COVID-19 Diagnosis: A case report. Eur Psychiatry. 2022;65(Suppl 1):S474. Doi: 10.1192/j.eurpsy.2022.1204. PMCID: PMC9567568.

37. Neelam K, Duddu V, Anyim N, Neelam J, Lewis S. Pandemics and pre-existing mental illness: A systematic review and meta-analysis. Brain Behav Immun Health. 2020;10:100177. Doi: 10.1016/j.bbih.2020.100177

38. Engels A, Stein J, Riedel-Heller SG, Konnopka C, König HH. The development of suicide risk in people with severe mental disorders during the first year of the COVID-19 pandemic: a claims-based cohort study. Soc Psychiatry Psychiatr Epidemiol. 2024;59(7):1193-1200. Doi: 10.1007/s00127-023-02584-z. PMID: 37996604; PMCID: PMC11178617.

39. Carlos L, Guilerma V. The COVID-19 pandemic and changes in spatio-temporal patterns of suicide: monthly variations among localities in Argentina. International Journal of Injury Control and Safety Promotion. 2023;31. 10.1080/17457300.2023.2279956.

40. Yoshioka E, JB Hanley SJB, Sato Y, Saijo Y. Impact of the COVID-19 pandemic on suicide rates in Japan through December 2021: An interrupted time series analysis. Lancet Reg Health West Pac. 2022;24:100480. Doi: 10.1016/j.lanwpc.2022.100480

41. Habu H, Takao S, Fujimoto R, Naito H, Nakao A, Yorifuji T. Emergency Dispatches for Suicide Attempts During the COVID-19 Outbreak in Okayama, Japan: A Descriptive Epidemiological Study. J Epidemiol. 2021;31(9):511-7.

Corresponding: Cemil Kavalcı, Antalya Trainingand Research Hospital, Emergency Department, Antalya, cemkavalci@yahoo.com
Doi: 10.66288/actamedi.2026.97