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Effect of COVID-19 Pandemic on Emergency Service Suicide Applications in a Tertiary Psychiatric Clinic in Türkiye

Türkiye'de Üçüncü Basamak Bir Psikiyatri Kliniğinde COVID-19 Pandemisinin Acil Servis İntihar Başvurularına Etkisi

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ABSTRACT

Objective: During the COVID-19 pandemic, several studies have reported increased suicidality. The widespread negative impacts of the pandemic, such as the economic downturn, isolation, and quarantine, have contributed to the complex interaction of factors influencing suicidal behavior. This study aimed to compare the clinical characteristics of individuals with suicidal thoughts/attempts between the pandemic and the pre-pandemic period.

Methods: This descriptive study retrospectively evaluated the data of patients between 2018 and 2022. The period from March 2020 to March 2022 was defined as the "pandemic period", while the period from March 2018 to March 2020 was labeled as the "pre-pandemic period". While 185 patients applied to the emergency department due to suicidal thoughts/attempts in the pre-pandemic period, the number of cases consulted during the pandemic was 150.

Results: During the COVID-19 period, 21% of patients were evaluated due to suicidal thoughts/attempts. In the pre-pandemic period, this rate was approximately 20%. There was no statistical difference between the groups in terms of age, suicide method, or lifetime psychiatric diagnoses. The proportion of males who presented with suicidality during COVID-19 was significantly higher.

Conclusion: Pandemics can create social trauma and increase suicide rates. Gender roles, such as men being more inclined to conceal their complaints and feeling more economically responsible, may have increased the rates of suicidality during the pandemic. The mental, physical, and social impacts of the pandemic should be assessed in this context, and necessary precautions and interventions should be planned.

Keywords: COVID-19, depression, emergency service, pandemic, suicidal attempt, suicidal ideation

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Öz

Amaç: COVID-19 salgını sırasında, çeşitli çalışmalar intihar eğiliminin arttığını bildirmiştir. Ekonomik gerileme, izolasyon ve karantina gibi salgının yaygın olumsuz etkileri, intihar davranışını etkileyen faktörlerin karmaşık etkileşimine katkıda bulunmuştur. Bu çalışma, pandemi dönemi ve pandemi öncesi dönem arasında intihar düşünceleri/girişimleri olan bireylerin klinik özelliklerini karşılaştırmayı amaçlamıştır.

Yöntemler: Bu tanımlayıcı çalışma, 2018 ile 2022 arasındaki hastaların verilerini retrospektif olarak değerlendirmiştir. Mart 2020 ile Mart 2022 arasındaki dönem "pandemi dönemi" olarak tanımlanırken, Mart 2018 ile Mart 2020 arasındaki dönem "pandemi öncesi dönem" olarak sınıflandırılmıştır. Pandemi öncesi dönemde intihar düşüncesi/girişimi nedeniyle acil servise başvuran hasta sayısı 185 iken, pandemi döneminde konsülte edilen olgu sayısı 150 dir.

Bulgular: COVID-19 döneminde hastaların %21'i intihar düşünceleri/girişimleri nedeniyle değerlendirilmiştir. Pandemi öncesi dönemde bu oran yaklaşık %20'dir. Gruplar arasında yaş, intihar yöntemi veya yaşam boyu psikiyatrik tanılar açısından istatistiksel bir fark saptanmamıştır. COVID-19 sırasında intihar eğilimi gösteren erkeklerin oranı anlamlı olarak daha yüksektir.

Sonuç: Pandemiler sosyal travma yaratabilir ve intihar oranlarını artırabilir. Erkeklerin şikayetlerini gizlemeye daha yatkın olması ve ekonomik olarak daha fazla sorumlu hissetmesi gibi cinsiyet rolleri, pandemi sırasında intihar oranlarını artırmış olabilir. Pandeminin ruhsal, fiziksel ve sosyal etkileri bu bağlamda değerlendirilmeli, gerekli önlemler ve müdahaleler planlanmalıdır.

Anahtar Sözcükler: COVID-19, depresyon, acil servis, pandemi, intihar girişimi, intihar düşüncesi

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INTRODUCTION

Suicide, defined as the act of intentionally causing self-harm that results in varying degrees of fatality, is a significant public health issue both in our country and worldwide (1). Approximately 800.000 individuals take their own lives due to suicide each year, with reported suicidal attempts being 30-40 times higher than this number (1). According to the Turkish Statistical Institute, suicide rates in Türkiye have increased by 89% over the past 20 years (2). The coronavirus disease-19 (COVID-19) pandemic, which started in December 2019 in China and spread worldwide, caused significant disruptions across various aspects of life, persisted for approximately two years. During the COVID-19 pandemic, the causes of suicide were extensively studied. Although some researchers did not find a significant difference in the number of completed suicides before and during the pandemic (3-5), other studies highlighted specific factors associated with an increase in suicidal tendencies (6-9). A study conducted in Türkiye in 2022 reported no increase in completed suicides during the pandemic period; however, hanging as a method of suicidal attempt was more common among individuals who were married, employed, and had mood disorders (3). Suicidal behaviors can arise from biological, psychological, environmental, and economic factors (10). A systematic review published in 2022 indicated some degree of heterogeneity in the factors influencing suicidal behaviors during the COVID-19 pandemic; economic downturn, psychiatric vulnerability, isolation and quarantine, health concerns, and relational difficulties were reported as the most prominent reasons for the development of suicidal behaviors (11). It is believed that during the early stages of the pandemic, social isolation, restricted access to healthcare services, and intra-family conflicts particularly contributed to an increase in suicide risk among vulnerable groups (12). Increases in unemployment, economic hardships, and elevated stress levels were associated with increased suicidal thoughts or attempts, especially during the pandemic's later stages (11). Considering both the early and later effects of the pandemic, the importance of resilience in relation to stress is evident. Apart from the exacerbation of existing mental disorders, the increase in rates of depression, anxiety disorders, eating disorders, and alcohol and substance use disorders in at-risk individuals can also lead to an increased risk of suicide (12). The widespread negative impacts of the pandemic have contributed to the complex interaction of factors influencing suicidal behavior. Continuing to monitor and address these factors is crucial for implementing effective prevention and intervention programs. There are only a few studies in our country that have evaluated the relationship between the pandemic and suicide (12-15). Gazi University Faculty of Medicine Hospital is one of the six centers in Ankara province that offer psychiatric inpatient services. Approximately 550-600 patients visit the emergency department annually due to psychiatric complaints and are evaluated from a psychiatric perspective. This study aimed to examine the clinical and sociodemographic characteristics of individuals presenting to the Gazi University Faculty of Medicine Hospital emergency department with suicidal thoughts or attempts during the pandemic and investigate whether there were differences compared with the pre-pandemic period, thus contributing to the literature.

MATERIALS AND METHODS

Study Design and Participants

This descriptive cohort study retrospectively evaluated the data of patients who presented to the emergency department of Gazi University Faculty of Medicine Hospital with suicidal thoughts or attempts and for whom psychiatric assessment was requested between March 2018 and March 2022. Patient data were categorized into groups based on the dates of admission, and the number and other characteristics of cases in the pre-pandemic and pandemic periods were statistically compared. The period from March 2020 to March 2022 was defined as the "pandemic period", while the period from March 2018 to March 2020 was labeled as the "pre-pandemic period". Through the hospital information management system, records of patients referred from the emergency department to the psychiatry department for reasons such as suicidal attempts, suicidal ideation, drug and other substance intoxication, and self-harming behaviors were examined. Patients deemed to have a history of suicidal thoughts or attempts based on the records were included in the study. Suicidal attempts were defined as behaviors in which a person intentionally engaged in actions endangering their life. It was determined that 188 out of 900 cases presented to the emergency department for psychiatric evaluation in the pre-pandemic period due to suicidal thoughts or attempts. During the pandemic period, 156 out of 691 patients who underwent consultation in the emergency department were evaluated for suicidal thoughts or attempts. Patients who did not await psychiatric evaluation and/or whose data could not be accessed for any reason, as well as those for whom evaluation results indicated no history of suicide, were not included in the study. Three patients in the pre-pandemic period and six patients in the pandemic period were excluded from the study because they left the hospital without completing medical procedures. In total, 335 patients constituted the study population. From the records of patients; sociodemographic information, past psychiatric history, and history of alcohol and substance abuse were obtained. Due to the significance of the relationship with suicide, the method of suicide and whether alcohol use was associated with suicidality at admission were investigated. Psychiatric diagnoses were determined according to the DSM-5 criteria using information from the records. In case of disagreement regarding diagnoses, a consensus was reached through a joint evaluation by all researchers. Patients were divided into two groups based on characteristics of suicidal behavior at admission. Patients were classified as planned suicide if they exhibited features such as having suicidal thoughts days before the suicide attempt, planning the time or method of suicide, or leaving a will or note to their relatives. On the other hand, patients who made a sudden decision to attempt suicide did not plan the act and did not have continuous, repetitive suicidal thoughts in the past few days were classified as impulsive suicide. Ethical approval for the study was obtained from the Gazi University Ethics Committee (approval number: 202-002, date: 21.12.2021). This study was conducted in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the world medical association Declaration of Helsinki-Ethical Principles For Medical Research Involving Human Subjects revised in 2013.

Statistical Analysis

IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0. (IBM Corp, Armonk, NY) was used for statistical analysis. Descriptive statistics are presented as median, frequency distribution, and percentage. Because data related to age did not follow a normal distribution, median ages were used instead of mean ages. The normal distribution of variables was examined visually (using histograms and probability plots) and analytically (using the Kolmogorov-Smirnov/Shapiro-Wilk test). Nonparametric tests were employed to compare patient characteristics between the pre-pandemic and pandemic periods due to the lack of normal distribution. The chi-square test was used to compare categorical variables, and the Mann-Whitney U test was used to compare continuous variables. Differences with a two-tailed p-value 0.05 were considered statistically significant.

RESULTS

Sociodemographic and Clinical Variables

During the COVID-19 period, 21% of patients who applied to the emergency department of Gazi University Faculty of Medicine Hospital and requested psychiatric consultation were evaluated due to suicidal thoughts or attempts. In the pre-pandemic period, this rate was approximately 20%. Numerically, there was a decrease in emergency department visits for psychiatric complaints during COVID-19. However, when examined proportionally, the proportion of applications for suicidal thoughts or attempts did not change. In the first year following the start of the pandemic (early pandemic period), the most frequent applications due to suicide were in June ($n=17$) and then July ($n=12$). The monthly distribution of suicide applications during the late pre-pandemic and early pandemic periods is shown in Figure 1.

In both the pre-pandemic and pandemic periods, median ages for applications were calculated as 30 [min.-max. ages: (pre-pandemic

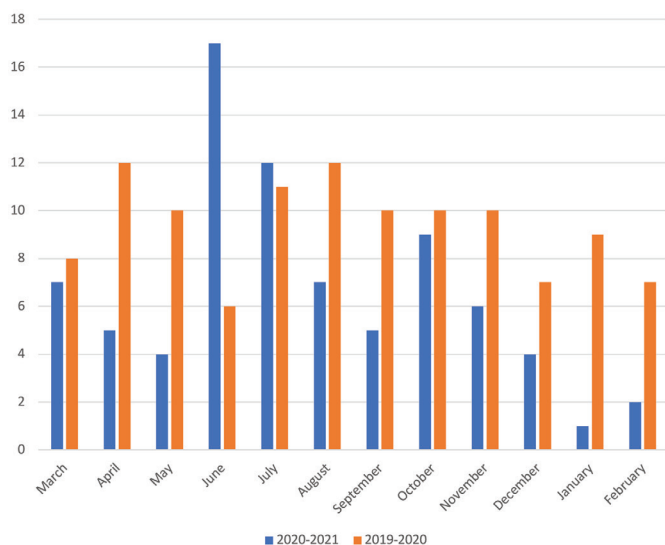


Figure 1. Monthly distribution of the late pre-pandemic period (2019-2020) and early pandemic period (2020-2021) in terms of suicide admissions

versus pandemic) 18-79 vs 18-83]. There was no statistical difference between the groups in terms of median ages ($p=0.873$). When analyzed by age groups, it was observed that 31.9% of pre-pandemic applications were in the 18-24 ages, 38.9% in the 25-39 ages, 27.6% in the 40-64 ages, and 1.6% were 65 years and older. In the COVID-19 period, 30% of applications were in the 18-24 ages, 46% in the 25-39 ages, 20% in the 40-65 ages, and 4% were 65 years and older. Before the COVID-19 pandemic, 33.5% of patients presenting with suicidal thoughts or attempts were male, and 66.5% were female. During the pandemic period, 48% of cases were male, and 52% were female. The proportion of males presenting with suicidal thoughts or attempts during the COVID-19 period was significantly higher ($\chi^2=7.243$, $p=0.007$). No significant differences were found in other sociodemographic variables. The education level, marital status, and employment status of patients in the pre-pandemic and pandemic periods are presented in Table 1. No statistically significant differences were found between the groups in terms of emergency department application patterns, severity and type of suicide attempts, method used for suicide, and clinical variables related to psychiatric history. These results are summarized in Table 2. At the time of admission, 95 (51.4%) patients in the pre-pandemic group and 72 (48%) patients in the pandemic group did not use any psychotropic drugs. The most frequently used psychotropic drugs in both groups were antidepressants (pre-pandemic: 81.1% vs pandemic: 67.9%) and antipsychotics (pre-pandemic: 47.7% vs pandemic: 61.5%), respectively. In the pre-pandemic group, 15 and 8 patients were taking mood stabilizers and 8 patients were taking benzodiazepines. In the pandemic group, 10 patients were using mood stabilizers, and 7 patients were using benzodiazepine. A total of 45.5% of patients in the pre-pandemic group and 46.1% in the pandemic group were receiving monotherapy.

DISCUSSION

In this study comparing the clinical and sociodemographic data of patients who presented to the emergency department with suicidal thoughts or attempts during the pandemic and pre-pandemic periods, there was no increase in the rates of suicidal thoughts or attempts during the COVID-19 period. Those who attempted suicide did not differ in terms of the method, type, and severity of suicide, as well as previous psychiatric disorders. Intriguingly, the rate of men presenting with suicidal thoughts or attempts during the COVID-19 period was significantly higher than that during the pre-pandemic period. Studies conducted during the early stages of the COVID-19 pandemic indicated an increase in mental health disorders and, in line with this, an increase in suicidal thoughts or attempts due to factors like uncertainty about the disease, intense quarantine, and social isolation (16-18). However, conflicting results emerged from studies as the pandemic progressed. Some studies reported an increase in suicidal thoughts or attempts during the pandemic (19-22). Conversely, studies from different regions worldwide indicated either no increase or even a decrease in suicide-related deaths compared with pre-pandemic periods (3,6, 23-26). Variations in methodologies, study periods, and assessment methods across these studies contributed to the divergent findings. A meta-analysis published in 2023, including 45 studies, reported no increase in completed suicides during the pandemic, but an increase in suicidal thoughts or attempts (6). However, in our study,

Table 1. Sociodemographic characteristics of patients

	Pre-pandemic period (n=185)	Pandemic period (n=150)	X ²	p
Gender				
Male	62 (33.5%)	72 (48%)	7.243	0.007*
Female	123 (66.5%)	78 (52%)		
Education level				
8<years	30 (22.9%)	24 (20.5%)	0.207	0.649
8≥ years	101 (77.1%)	93 (79.5%)		
Marital status				
Single	99 (53.5%)	80 (53.3%)	0.039	0.981
Married	59 (31.9%)	47 (31.3%)		
Divorced/widowed	27 (14.6%)	23 (15.3%)		
Employment				
Employed	83 (44.9%)	54 (36%)	3.2857	0.167
Unemployed/retired	67 (36.2%)	69 (46%)		
Student	35 (18.9%)	27 (18%)		
Living conditions				
Alone	32 (17.3%)	17 (11.3%)	2.359	0.125
With family/friends	153 (82.7%)	133 (88.7%)		

*p<0.05

Table 2. Clinical characteristics of patients

	Pre-pandemic period	Pandemic period	X ²	p
Admission type (n=185/150)				
Suicidal thoughts	37 (20%)	28 (18.7%)	0.094	0.759
Suicide attempt	148 (80%)	122 (81.3%)		
Suicide method (n=148/122)				
Lethal (hanging, jumping, gun-shot)	10 (6.8%)	8 (6.6%)	0.004	0.948
Nonlethal (intoxication, basic cutting)	138 (93.2%)	114 (93.4%)		
Type of suicide (n=148/122)				
Impulsive	125 (84.5%)	108 (88.5%)	0.9345	0.334
Planned	23 (15.5%)	14 (11.5%)		
Alcohol use during suicide attempt (n=146/117)				
	29 (19.9%)	25 (21.4%)	0.0901	0.764
Lifetime psychiatric diagnosis (n=185/150)				
	107 (57.8%)	94 (62.7%)	0.805	0.370
Type of psychiatric diagnoses (n=107/94)				
Mood disorders	72 (67.3%)	47 (50%)		
Psychotic disorders	14 (13.1%)	17 (18.1%)		
Alcohol and substance use disorders	5 (4.7%)	9 (9.6%)	7.5427	0.110
Anxiety disorders				
Others (personality disorders, dissociative disorders, etc)	11 (10.3%)	11 (11.7%)		
	5 (4.7%)	10 (10.6%)		

*p<0.05

we did not observe an increase in suicidal thoughts or attempts during the pandemic compared with the pre-pandemic period. Another study from our country showed no difference in emergency applications due to suicide attempts between the first six months after the pandemic and the same months of the previous year (27). In our country, factors such as shifted or remote work might have contributed to stress reduction. Moreover, quarantine measures, increased quality time among individuals living in the same household, and heightened communication and sharing might have acted as perceived social support, potentially mitigating the increase in suicidal thoughts or attempts. The relatively limited representation of individuals from a specific geographic region in our study and the small sample size may have influenced these outcomes. During the COVID-19 period, the rates of men seeking emergency care due to suicidal thoughts or attempts were statistically higher than those during the pre-pandemic period. In the literature, suicide attempts are reported to be more common in women, whereas completed suicides are more common in men (28). Some studies conducted during the pandemic have also reported a higher risk in men (29,30). Gender roles, such as men being more inclined to hide their complaints and seeking psychiatric help less frequently, may have combined with the traumatic impact of the pandemic to increase the rates of suicidal thoughts and attempts. The COVID-19 pandemic has caused unemployment, bankruptcies, and other economic difficulties around the world (31-33). In times of economic crisis, young married men face more difficulties than women because they take on the responsibility of providing income for their families (34). Sociologist Durkheim referred to these economic turmoil-triggered suicides as anomic suicides (35). Similarly, in our study, men's feeling of being financially responsible may have contributed to their higher suicide rates. From a sociodemographic perspective, most cases seeking help due to suicidal thoughts or attempts during both the pandemic and pre-pandemic periods were predominantly between the ages of 18-40, single, and most of them lived with their families or friends in our study. Generally, suicide attempts are reported to be more frequent among individuals aged 18-24, single, and living alone (28). During the pandemic, single individuals had a higher tendency for suicidal thoughts or attempts (36). Contrary to the literature, in our study, cases admitted with suicidal thoughts or attempts lived alone at a lower rate in both of the two periods. This situation could be attributed to the high prevalence of living with family despite being single in our country. Regarding employment status, although not statistically significant, a higher proportion of unemployed individuals was obtained among cases presenting with suicidal thoughts or attempts during the pandemic. The literature suggests that unemployment, financial difficulties, and economic uncertainty during the pandemic have increased the risk factors of suicide (37-39). Our study supports the notion that unemployment poses a higher risk of suicidal thoughts and attempts. When examining the clinical characteristics of the cases in both periods, impulsive suicide attempts were the most common, and less lethal methods were predominantly used. A study conducted in Spain reported that cases presenting with suicide attempts used more lethal methods and required more intensive care (40). In other studies evaluating suicide methods during the pandemic, drug overdose was reported to be the most frequently

used method (12,39,41). Reduced access to other suicide methods due to restrictions and the majority of unplanned attempts may have led to the use of less lethal methods such as a suicide method. In our study, most patients presenting to the emergency department because of suicidal thoughts or attempts had a known mental disorder. This finding is consistent with studies reporting that completed and attempted suicides are more common among individuals with mental disorders (42,43). On the other hand, there was a higher rate of individuals without lifetime psychiatric disorders among those who presented during the COVID-19 period, but this result did not reach statistical significance, possibly due to the inadequacy of the sample size. Although not statistically significant, the increase in the proportion of patients without previously known mental disorders is noteworthy. Many studies have reported an increase in the frequency of mental disorders during the pandemic (44,45). Moreover, restricted access to healthcare, reluctance to seek hospital care due to quarantine measures, or fear of infection might have led to the inability of individuals to receive mental health assistance, contributing to an increase in suicidal thoughts and attempts. It is well known that depression is the most common mental disorder associated with suicide (46). In our study, depression was the most frequent mental disorder in both groups. Although not statistically significant, during the pandemic period, more cases were diagnosed with alcohol and substance use, psychosis, and other mental disorders. During the pandemic, restricted access to healthcare services, especially for patients with psychotic disorders, may have resulted in untreated conditions, disease relapse, and subsequent increases in suicidal thoughts and attempts. In a study comparing the six months since the beginning of the pandemic in Türkiye with the same months of the previous year, the most frequent psychiatric emergency applications were in June, July, and August 2020 (27). In our study, the most common emergency cases for suicidality occurred in June and then in July during a similar period. This result may have been influenced by the implementation of strict lockdown rules in our country in the first three months from the beginning of the pandemic and the fact that there was a common external threat for the entire society, such as the risk of contagion. Similarly, studies in different countries have shown a decrease in the suicide rate compared to previous years in the first three months when the lockdown policy was widespread (47-49). Moreover, previous studies have reported a decline followed by a delayed increase in suicide rates after national disasters, including Hurricane Katrina in 2005 or the September 11 terrorist attack in 2001. The initial drop is referred to as the pulling-together or honeymoon effect (50,51). The subsequent relaxation of lockdown rules and increased stress due to the ongoing risk of the pandemic and financial problems may have led to an increase in applications for suicidal thoughts or attempts. The literature suggests that unemployment, financial difficulties, and economic uncertainty during the pandemic have increased the risk factors of suicide (37-39). On the other hand, despite the partial reduction of lockdown rules, the continuation of stay-at-home and social isolation practices may have increased domestic violence, which may have led to an increase in the tendency to commit suicide. Various studies support this statement regarding the relationship between domestic violence and the pandemic (52-54).

Study Limitations

Our study has several limitations. The retrospective design and single-center nature of the study are the most significant limitations. Not assessing past suicidal thoughts or attempts and completed suicide rates in the study is another limitation. However, although this represents a small sample size, being the first study to compare suicidal thoughts or attempts before and during the pandemic period in our country adds value to the findings.

CONCLUSION

Suicide is a significant public health concern, both in our country and around the world. Situations like pandemics, wars, and natural disasters can create societal trauma, leading to an increase in mental disorders and associated suicide rates. The mental, physical, and social impacts of the pandemic should be assessed in this context, and necessary precautions and interventions should be planned. There is a need for more comprehensive studies in this field in Türkiye.

Ethics

Ethics Committee Approval: Ethical approval for the study was obtained from the Gazi University Ethics Committee (approval number: 202-002, date: 21.12.2021).

Informed Consent: Retrospective study.

Footnotes

Authorship Contributions

Concept: B.K., Design: B.K., M.Ü., Supervision: S.C., Resources: B.K., Data Collection or Processing: H.G., B.Ü., H.C.S., Analysis or Interpretation: B.K., M.Ü., Literature Search: B.K., M.Ü., Writing: B.K., M.Ü., H.G., Critical Review: B.K., H.C.S., S.C.

Conflict of Interest: No conflict of interest was declared by the authors.

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