



Did the COVID-19 Pandemic Period Increased Suicide Attempts in Society?

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Abstract

Aim: To analyze the influence of the COVID-19 pandemic and quarantine on suicidality.

Material and Methods: This study was conducted on patients over the age of 15 who were suicidal and admitted to the emergency department of our hospital. The patients were disunited into two groups: pandemic group covering the period from March 11, 2020 to March 11, 2021, the former being the date when the first patient of COVID-19 was identified in Turkey, and pre-pandemic group covering the period from March 11, 2019 to March 10, 2020.

Results: The study was conducted with a total of 271 patients. The number of suicide attempts in the first time period (March-April-May-June) was 42 (28.4%) in the pandemic group and 16 (13.0%) in the pre-pandemic group, with significantly higher numbers in the pandemic group for the first time period ($p=0.008$). The distribution in the remaining second and third time periods was similar to those in the previous year.

Conclusion: Compared to the pre-pandemic period, suicide attempts significantly increased in the early stages of the pandemic as the first case was identified in Turkey and the lockdown was imposed because of the increasing cases. In the later stages of the pandemic, there was no obvious change in the amount of suicide compared to previous periods.

Keywords: COVID-19, suicide, pandemic

INTRODUCTION

Coronavirus disease 2019 (COVID-19) is a highly contagious disease that can cause significant acute respiratory failure. It had a devastating impact around the world, killing more than 6 million people worldwide. It has emerged as the most important global health problem since the 1918 flu pandemic (1). Infectious diseases can cause organic pathological consequences and symptoms in the human body. Even in the case of an individual illness, it is possible for the person to be affected psychologically. In a worldwide pandemic that affects the whole country and even all humanity, people are affected spiritually and some psychological symptoms may occur. In previous outbreaks, stress was the most common mental health symptom. This was a symptom of acute stress, distress

or post-traumatic stress. Less frequently, it was seen as anxiety, fear, depression and sleep disorders (2). As a result of the research, symptoms such as anxiety, depression and stress are more common in the community regarding mental health related to COVID-19, unlike previous pandemics (3).

Due to the impact on social structure, few changes were observed in the suicide rates following the natural disasters worldwide (4). It is known that infections such as MERS and SARS-CoV-2, which have lately affected the world, leads to negative psychosocial impacts on communities, and the suicide rates increased in those parts of the world where these diseases led to an epidemic (5).

Studies have revealed that different types of changes due

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to the COVID-19 pandemic can cause suicidal thoughts and behaviors in individuals and society in general (6). The emotional reaction of people to pandemics may differ according to countries or geography, and even according to the religions believed. Moreover, it was observed that positivity and the desire to live declined in China, whereas negativities, such as anxiety, depression, and anger, continued to increase (7).

Experienced stress or affective disorders both affect the quality of life and cause some psychosocial consequences. If people cannot cope with their negative feelings and thoughts, it is possible for them to initiate the process that leads them to suicide. Suicide attempts result from multiple factors that are related to long-term social isolation, economic and psychosocial status as well as physical health (8). In most societies across the world, the economic, social, and personal burdens due to the pandemic may contribute to the suicidal attempts (9).

With the onset of the pandemic in Turkey, various measures have been introduced including closure of schools, full or part-time lockdowns, closure of certain categories of businesses, and introduction of travel restrictions. These measures led to various social and economic consequences in the society. This article investigates the effect of the COVID-19 pandemic and lockdown on suicidality in Turkey.

MATERIAL AND METHOD

Study Design and Setting

This is a one-center and cross-sectional investigation comprising patients who were presented to the emergency department of a tertiary university hospital, that annually admits 300,000 patients. The data were taken from the hospital's data system.

Patient Selection

The first patient of COVID-19 was identified in Turkey on March 11, 2020 and led to the onset of the pandemic. The pre-pandemic group included patients aged 15 years and older who were presented to the emergency department of our hospital between March 11, 2019 and March 10, 2020 for attempted suicide, whereas the pandemic group comprised patients aged 15 years and older who were presented for attempted suicide between March 11, 2020 and March 11, 2021. Patients were excluded if they were pregnant, under 15 years, or had any missing data.

Data Collection

Patients were disunited into two groups based on the pandemic and pre-pandemic period. Patients' age, gender, history and method of suicide, history of psychiatric illness and suicide attempts, and the need for hospitalization were determined for each group. In addition, the history of COVID infection was determined for the patients included in the pandemic group. The methods of suicide attempt were classified as intoxication with drugs, hanging, self-laceration with a sharp object, and jumping from a height.

Demographic characteristics were compared between the two groups. The study aimed to determine whether there was a change amount of suicide attempts in the years of pandemic compared to the pre-pandemic date. Changes in the amount of suicide attempts during the period when lockdowns and restrictions were imposed and when the pandemic peaked were compared to those in the previous year. For both the groups, the incidents of suicide were divided into three time periods consisting of four-month intervals. These four-month periods were associated with specific lockdown periods. The first time period lasted through March-April-May-June, 2020, when the first case was identified, cases rapidly increased, and several lockdowns were imposed; the second time period included July-August-September-October, when the number of cases sharply declined and there was no lockdown; the third time period of November-December-January-February was when the number of cases increased again and the lockdowns were reintroduced.

Statistical Analysis

To summarize data from the investigation, descriptive statistics are given in tables with mean \pm standard deviation or median, minimum, and maximum for continuous (numerical) variables. The normality of numeric variables was confirmed with the Shapiro-Wilk, Kolmogorov-Smirnov, and Anderson-Darling tests. For comparing two independent groups in cases where numerical variables were not normally distributed, the Mann-Whitney U Test was used. For the comparison of categorical variables by the groups, the Pearson Chi-square test was used in 2x2 tables with expected cells of 5 and over and the Fisher Freeman Halton test was used in RxC tables with expected cells < 5. Statistical analyses were performed with "Jamovi project (2021)," Jamovi (Version 2.2.2.0 [Computer Software]; retrieved from <https://www.jamovi.org>) and JASP (Version 0.16; retrieved from <https://jasp-stats.org>) programs, and the level of significance in statistical analysis was set at 0.05 (p-value).

Ethical clearance was obtained from the Ethics Committee of Non-Interventional Clinical Researches of Karabuk University.

RESULTS

The study was conducted with a total of 271 patients. There were 148 patients in the pandemic group, consisting of 79 men (53.4%) and 69 women (46.6%), whereas 123 patients were involved in the pre-pandemic group, occur of 56 men (45.5%) and 67 women (54.5%). Mean age was statistically higher in the pandemic group than the patients in the pre-pandemic group ($p=0.013$). There was no statistical difference between the two patient groups in terms of gender distribution ($p=0.198$). Although 45.3% and 42.3% of the patients in the pandemic and pre-pandemic groups had a known history of psychiatric illness, respectively, there was no statistical difference between them ($p=0.621$). Compared to 22.8% in the pre-pandemic group ($p=0.496$), 39 patients (26.4%) in the

pandemic group had a previous history of failed suicide attempts. Only five patients (3.4%) had a history of COVID infection in the pandemic group. The groups showed no difference in terms of the need for hospitalization for attempted suicide (Table 1). There were no deaths reported in the emergency department or during hospitalizations in patients admitted to the hospital for attempted suicide.

Table 1. Demographic and clinical characteristics of the groups

	groups		p-value
	pandemic group (n=148)	pre-pandemic group (n=123)	
Age (year) [†]	30.3±11.4	27.7±13.3	0.013*
^a	28.0 [15.0–74.0]	23.0 [14.0–59.0]	
Gender [‡]			
Man	79 (53.4)	56 (45.5)	0.198**
Women	69 (46.6)	67 (54.5)	
History of psychiatric illness [‡]	67 (45.3)	52 (42.3)	0.621**
History of suicide attempts [‡]	39 (26.4)	28 (22.8)	0.496**
History of COVID infection [‡]	5 (3.4)	0 (0)	--
Need for hospitalization [‡]	72 (48.6)	72 (58.5)	0.104**

†: mean±standard deviation
[‡]: n (%), ^a: median [min.-max.]
 *: Mann-Whitney U test
 **: Pearson Ki-square test

In the pandemic group, the highest number of suicide attempts was reported to be 18 cases in July (12.2%), whereas the highest number reported in the pre-pandemic group was 17 cases in January (13.8%). There was no statistical difference between the two patient groups in the distribution of suicide attempts by months ($p=0.188$) (Table 2) (Figure 1).

Attempting suicide using drugs was the most common method of suicide in both the groups (69.6% and 77.2%). No statistical difference was observed between the groups in terms of suicide attempt method ($p=0.485$).

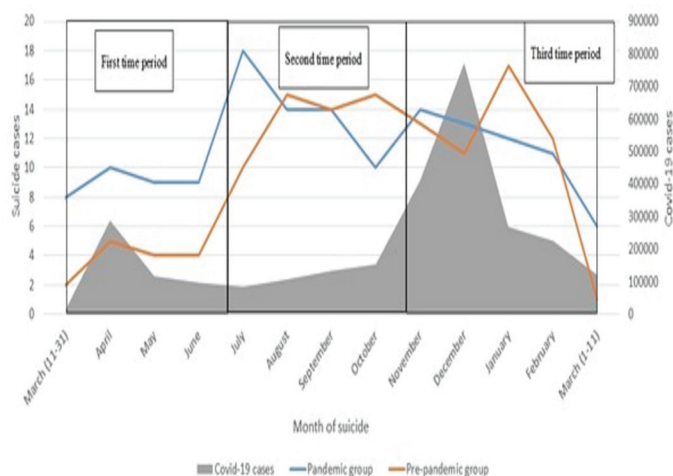


Figure 1. Distribution of suicide attempts by month

Table 2. Temporal distribution of suicide attempts and cross-group comparison by method

	groups		p-value
	pandemic group (n=148)	pre-pandemic group (n=123)	
Month of suicide attempt [‡]			
January	12 (8.1)	17 (13.8)	0.188
February	11 (7.4)	12 (9.8)	
March	14 (9.5)	3 (2.4)	
April	10 (6.8)	5 (4.1)	
May	9 (6.1)	4 (3.3)	
June	9 (6.1)	4 (3.3)	
July	18 (12.2)	10 (8.1)	
August	14 (9.5)	15 (12.2)	
September	14 (9.5)	14 (11.4)	
October	10 (6.8)	15 (12.2)	
November	14 (9.5)	13 (10.6)	
December	13 (8.8)	11 (8.9)	
Method of suicide [‡]			
Drugs	103 (69.6)	95 (77.2)	0.485
Hanging	5 (3.4)	2 (1.6)	
Self-laceration with a sharp object	33 (22.3)	23 (18.7)	
Jumping from a height	7 (4.7)	3 (2.4)	

[‡]: n (%)
 Used Fisher-Freeman-Halton test

There were 42 (28.4%) cases of suicide attempts in the first time period (March-April-May-June) in the pandemic group compared with 16 (13.0%) in the pre-pandemic group, with significantly higher numbers present in the first time period in the pandemic group ($p = 0.008$). The distribution was similar in the remaining second and third time periods for the groups compared to those in the previous year (Table 3).

Table 3. Cross-group comparison of suicide attempts by temporal distribution and method

	groups		p-value
	pandemic group (n=148)	pre-pandemic group (n=123)	
Period of suicide attempt [‡]			
1. time period (March-April-May-June)	42 (28.4) ^a	16 (13.0) ^b	0.008
2. time period (July-August-September-October)	56 (37.8)	54 (43.9)	
3. time period (November-December-January-February)	50 (33.8)	53 (43.1)	

[‡]: n (%)
 Used Pearson Ki-square test

DISCUSSION

The results of this investigation showed an important increase in the suicide cases between March and June, which is the same period when the first patient of COVID-19 was identified in Turkey, lockdowns and restrictions were imposed, the number of cases increased,

and the pandemic reached its first peak, compared to the same time period of the last year. There was no important change in the number of suicide cases between November and February of the pandemic period, which marked the second peak with lockdowns and restrictions, compared to the same time period of the last year. Likewise, there was no important change in the number of suicide cases in July–October, the period without any increase in cases and lockdowns. In the United States, similar to Turkey, in the early of the pandemic, the number of suicide attempts increased, with a gradual decrease in suicide attempts seen in the later course of the pandemic (10). The lack of knowledge of COVID-19 infection and social isolation may have caused extreme anxiety among people in the first period of the pandemic. Several factors may have helped people to cope with the pandemic in the later stages, including getting used to the new situation, the emergence of alternative communication methods, and increased socialization.

Although similar results were obtained in our study in the United States, Rachel S Bergmans found a decrease in suicide cases in the first 7 months of the COVID 19 pandemic in her research in Washtenaw County, Michigan. He suggested that the reason for this may be the decrease in socialization in the early period of the pandemic, the closure of schools due to remote working from home, the decrease in the stress factor due to the absence of academics from school, and the difficulty in accessing suicide tools. In the same study, it was stated that the decrease in suicide attempts in men, caucasians and unmarried people was not very clear. In the light of this information, it can be concluded that there may be different rates of suicide attempts in different regions within the borders of the same country (11).

In the pandemic and pre-pandemic groups, the patients who attempted suicide were similar in terms of previous history of psychiatric illness. There was no statistical difference between the two patient groups in terms of previous failed suicide attempts. Likewise, there was no meaningful difference between the two groups in terms of their need for hospitalization due to attempted suicide. There were no patients who attempted suicide during the course of COVID-19 infection.

In various parts of the world as well as in Turkey, suicidal thoughts and suicide attempts have increased during the pandemic period (11,12). A UK-based study found increased suicidal thoughts and suicide attempts, especially in young adults, during the COVID-19 pandemic when the lockdowns were imposed (13).

In the study of William D S Killgore et al., it was determined that there was an increase in suicide attempts in people who were isolated and under restraint in the early period of the pandemic, and there was no change in suicide attempts and thoughts in individuals without restriction and isolation compared to the previous period. Considering that there are strict restrictions in the early period of the pandemic in Turkey and that individual isolation is applied

in large quantities, the results of changes in suicide attempts are similar (14).

In Turkey, the mean age of individuals who attempted suicide in the pre-pandemic group was similar to that of those who attempted suicide in routine life (15). However, the mean age of those who attempted suicide in the pandemic group was significantly higher than that of those who attempted suicide in routine life. This can be attributed to the economic issues experienced throughout the quarantine.

It is difficult to attribute the increase in suicide cases to a single cause. Multiple factors may have contributed to suicidal thoughts among people during the pandemic period, such as restrictions, social isolation, economic distress, physical and mental health concerns, excessive stress, and anxiety.

CONCLUSION

In this study, the changes in cases of suicide in the pandemic period and pre-pandemic period of the covid-19 infection, which affects the whole world, were evaluated. In the early period of the pandemic, when the first case was seen in Turkey, the number of cases increased and quarantines were applied, suicide attempts increased significantly compared to the pre-pandemic period. In the later time periods of the pandemic, no significant change was observed in the suicide attempt compared to the pre-pandemic period. The COVID-19 pandemic has not only affected people physically, but also mentally, as in other pandemics in the past.

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