



Relationship of the emergency department presentation frequency of patients using methamphetamine with the COVID-19 pandemic

 **Fatma Cakmak**

Erzurum City Hospital, Department of Emergency, Erzurum, Türkiye

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Abstract

This retrospective study aimed to evaluate the emergency department (ED) presentation frequency of patients using methamphetamine in pre-COVID-19 and COVID-19 pandemic periods. According to their presentation period, the patients were evaluated in two groups as pre-pandemic and pandemic. The frequency of presentation and demographic characteristics of the patients were compared according to the periods. The study included a total of 620 patients, including 500 patients that presented to ED during the pre-pandemic period and 120 during the pandemic period. When the rates of ED presentation were compared between the two periods, there was a decrease of 76% in the pandemic period. These results suggest that the rate of the use of addictive substances can be reduced by taking public health measures.

Keywords: COVID-19, methamphetamine, addiction, drug use

Introduction

The COVID-19 pandemic has negatively affected people on a global scale, resulting in general health problems, financial strain, physical dependence, stress, anxiety disorder, and psychiatric disorders [1-3]. Some studies have shown that individuals resorted to addictive behaviors, such as alcohol use and internet addiction to reduce their stress during the pandemic period [4-6]. It has also been suggested that the substance use of patients with mental problems due to isolation may relapse [7] or progress [8]. Methamphetamine is a synthetic drug that is also often used illegally across the world [9]. Unlike short-acting stimulants, methamphetamine has a long stimulant effect. Therefore, it is a stimulant that causes more complications [10] and has which results in patients presenting to the emergency department (ED)

after its use and consequences that affect psychological and public health [11], often resulting in patients presenting to ED after its use. It has, thus, been predicted that there may be differences in the rate of ED presentations of patients using methamphetamine during the pre-pandemic and pandemic periods.

This study aimed to evaluate the frequency of ED presentations of patients that used methamphetamine in the pre-COVID-19 period and during the COVID-19 pandemic and to evaluate the demographic characteristics of these patients according to the period.

Material and Methods

The study was commenced after receiving local ethics committee approval, numbered E-37732058-508.04 and dated 05.10.2021.

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Corresponding Author: Fatma Cakmak, Erzurum City Hospital, Department of Emergency, Erzurum, Türkiye
Email: dr.fatmacakmak@gmail.com

This retrospective study was conducted at the tertiary ED of Erzurum City Hospital. Patients using methamphetamine who visited ED from March 11, 2019, through March 11, 2021, were included in the study. The patients were evaluated in two periods as March 11, 2020-March 11, 2021 (when COVID-19 was declared a pandemic) and March 11, 2019-March 10, 2020 covering the year before the pandemic. The patients that presented to ED during pre-pandemic period were evaluated as the pre-pandemic group and those that presented to ED during the pandemic period were considered as the pandemic group. All patients aged over 18 years who were using methamphetamine and visited ED due to the use of this drug were included in the study. Data were screened from the patient files and hospital automation system. The patients' age, gender, marital status, employment status, ED presentation seasons, frequency and duration of methamphetamine use, and presence of a psychiatric diagnosis were investigated. Patients with missing data were excluded from the study. The duration of methamphetamine use was evaluated as six months and less than six months or longer than six months. The frequency of methamphetamine use was evaluated daily, weekly, monthly or once/twice in total. The data obtained were compared before the pre-pandemic and pandemic periods.

Statistical Analysis

25.0 (IBM Corp., Armonk, New York, USA) software was used for statistical analysis. The distribution of variables was evaluated for normality using the Kolmogorov-Smirnov test. Descriptive statistics were given as frequency (n) and percentages (%) for categorical variables. Comparison of the groups for variables

with a normal distribution was performed with Student's t-test. In 2x2 comparisons between categorical variables, the Pearson chi-square test was performed. In all the tests, $p < 0.05$ was considered significant.

Results

We reached 718 patients files in this study, but 98 (82 from the pre-pandemic period and 16 from the pandemic period) were excluded due to missing data. Of the remaining 620 patients, 500 were in the pre-pandemic group and 120 were in the pandemic group (Figure 1). When the rates of ED presentations were compared between the two periods, there was a 76% decrease in the pandemic period.

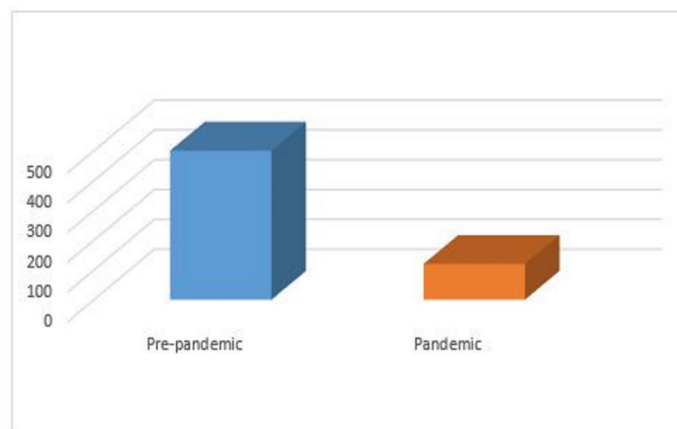


Figure 1. Pre-pandemic and pandemic emergency department presentations of patients using methamphetamine

Table 1. Comparison of demographic characteristics of the patients using methamphetamine between the pre-pandemic and pandemic periods

Variables		Pre-pandemic period n=500 (%)	Pandemic period n=120 (%)	P
Age (years/standard deviation)		27.33±9.58	30.47±9.48	0.934**
Gender	Female	28 (5.6)	7 (5.8)	0.921*
	Male	472 (94.4)	113 (94.2)	
Marital status	Married	232 (46.4)	57 (47.5)	0.828*
	Single	268 (53.6)	63 (52.5)	
Employment status	Employed	153 (30.6)	38 (31.7)	0.820*
	Unemployed	347 (69.4)	82 (68.3)	
Presentation season	Summer	95 (19.0)	20 (16.7)	0.000*
	Autumn	141 (28.2)	6 (5.0)	
	Winter	130 (26.0)	46 (38.3)	
	Spring	134 (26.8)	48 (40.0)	
Frequency of methamphetamine use	Daily	124 (24.8)	28 (23.3)	0.879*
	Weekly	104 (20.8)	22 (18.3)	
	Monthly	104 (20.8)	26 (21.7)	
	Once or twice	168 (33.6)	44 (36.7)	
Duration of methamphetamine use	≤6 months	154 (30.8)	41 (34.2)	0.476*
	>6 months	346 (69.2)	79 (65.8)	
Psychiatric diagnosis	Present	172 (34.4)	45 (37.5)	0.523*
	Absent	328 (65.6)	75 (62.5)	

**Student t-test, *Chi-square test

The mean age of the patients was 27.33 ± 9.58 /year for the pre-pandemic group and 30.47 ± 9.48 /year for the pandemic group, no statistical difference was found between the pre-pandemic and pandemic groups ($p=0.934$). There were 28 (5.6%) female and 472 (94.4%) male patients in the pre-pandemic group and seven (5.8%) female and 131 (94.2%) male patients in the pandemic group. No significant difference was found between the two periods according to gender ($p=0.921$). The remaining demographic characteristics of the patients are given in Table 1.

When the patients were evaluated according to their marital status, there were 232 (46.4%) married individuals in the pre-pandemic group and 57 (47.5%) in the pandemic group. The marital status of the patients did not significantly differ between the periods ($p=0.828$) (Table 1).

When the employment status of the patients was evaluated, the number of unemployed individuals was 347 (69.4%) in the pre-pandemic period and 82 (68.3%) in the pandemic period. No statistical difference was found between in employment status between the periods ($p=0.820$). A psychiatric diagnosis was present in 172 (34.4%) patients in the first group and 45 (37.5%) patients in the second group. In both periods, all (100%) of those with psychiatric illness were receiving psychiatric drugs support (Table 1).

Discussion

The COVID-19 pandemic has been associated with increased anxiety, fear, sadness, stress disorder symptoms, and suicidal ideation in certain populations [11]. Therefore, it would be expected that under pandemic conditions, the frequency of the use of addictive substances and alcohol would increase among substance addicts who try to cope with their existing problems [11]. However, in a study conducted in Australia, it was determined that there was a 67% decrease in patients that visited ED having used a recreational drug [12]. Similarly, other studies have reported a decrease in the use of some addictive substances during the pandemic period [13-15]. In our study, there was a 76% decrease in the ED presentations of individuals using methamphetamine during the COVID-19 period compared to the pre-pandemic period.

Travel restrictions during the pandemic period, difficulties in accessing recreational substances, increased isolation, and inability to meet supply and demand are considered to reduce the rate of methamphetamine use [16]. It has also been stated that measures that have been taken to prevent the spread of infection and maintain social distancing have resulted in lifestyle changes, such as avoiding group smoking, increased self-sufficiency, adaptation to staying at home, and addicts trying to cope with their addiction, which has led to a reduction in the use of recreational substances during the COVID-19 period [15]. In this study, we consider that methamphetamine use decreased in the pandemic period due to travel restrictions in the region where the study was conducted, lockdown measures implemented, and most commercial places being closed, making it difficult to access recreational drugs.

Studies on drug use show that the rate of methamphetamine use is more common among men. Despite the lower rate of drug use in women, they have been reported to prefer methamphetamine over other drugs [17]. In our study, most patients that used methamphetamine in both periods were male.

When the employment status of people using methamphetamine is evaluated, most of these individuals did not have work, and their livelihood is provided by other people [18]. In our study, it was determined that most of the methamphetamine users in the pre-pandemic and pandemic periods were not employed.

Limitations

Our study is limited by the single-centered and retrospective design. In addition, the patients' use of other recreational substances was not known, and therefore it was not possible to determine whether there was a change in the type of recreational substance used during the pandemic period.

Conclusion

In line with the measures introduced to maintain social distance and reduce the spread of infection during the COVID-19 pandemic, the use of methamphetamine decreased during this period compared to the pre-pandemic period. This suggests that the rate of the use of addictive substances can be reduced by taking public health measures.

Conflict of interests

The authors declare that there is no conflict of interest in the study.

Financial Disclosure

The authors declare that they have received no financial support for the study.

Ethical approval

The study was commenced after receiving local ethics committee approval, numbered E-37732058-508.04 and dated 05.10.2021.

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