ORIGINAL ARTICLE

Substance Abuse Mortality and Socioeconomics: A Comparative Study of Istanbul's Districts

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Main Points

- The increase in deaths due to amphetamine derivatives is particularly striking.
- Social isolation of people with substance use disorders limits the possibility of timely medical intervention in cases of overdose.
- Deaths due to cocaine use were common in districts with a higher socioeconomic status, whereas deaths due to amphetamine derivatives and heroin use were common in districts with a lower socioeconomic status.
- Although the number of deaths due to substance abuse appears to be low in districts with a high socioeconomic status, it is higher than in districts with a low socioeconomic status when compared with the population.
- Strengthening preventive health services, expanding early intervention programs, and increasing social support mechanisms for drug users will play a crucial role in preventing these deaths.

Abstract

The fight against substance use disorders, which have been on the rise in recent years, requires a multidisciplinary approach. The factors that cause addiction, environmental factors that enable substance access, and the resulting harm from substance use are intertwined. As per the 2021 data released by the Istanbul Morgue Specialization Department of the Council of Forensic Medicine, drug or stimulant use caused 1.7% of the 5458 autopsies conducted. In our research, deaths resulting from polysubstance use are the most prevalent, with amphetamine derivatives being the most frequently detected substance. The rise in fatalities associated with amphetamine derivatives and their easy accessibility pose a significant public health concern. Based on these findings, it is crucial to focus on the environmental and economic factors that support the use of these substances to control access to amphetamine derivatives. Additionally, people with substance abuse problems are isolated due to social isolation. This situation makes it difficult for them to access addiction treatment and prevents them from receiving emergency medical intervention in the event of an overdose. In this context, it is advisable to adopt a multidisciplinary approach and to develop a comprehensive intervention strategy in cooperation with the health, education, and security sectors.

Keywords: Death, drug, Istanbul, polydrug, polysubstance, substance abuse

Introduction

Substance use disorder (SUD) is a social problem with an increasing prevalence that negatively affects not only the individual but also the family, society, and general health. Substance use disorder is known to cause mortality and morbidity and is one of the important risk factor leading to the development of various diseases. When the treatment rates of SUD are analyzed, it is observed that a large proportion of patients are excluded from receiving treatment

(Daley, 2013). Although it is known that substances such as amphetamine derivatives, opioids, and cannabinoid derivatives are widely abused in society, the use of new synthetic substances is increasing day by day (Akhgari et al., 2021).

According to the 2022 World Drug Report of the United Nations Office on Drugs and Crime, 40% of people with SUD use morphine, 35% use hallucinogens, 15% use amphetamine derivatives, 6% use sedative and hypnotic substances, and 4% use cocaine. It is known that 77% of drug or stimulant-related deaths are caused by opioids, 7% by amphetamine derivatives, 4% by cocaine, 4% by cannabinoids, 2% by sedative and hypnotic substances, 2% by hallucinogens, 2% by new psychoactive substances, and 2% by other substances (United Nations Office on Drugs and Crime, 2021).

The cause of death is defined as the disease or injury that initiates the death chain. As a result of high-dose drug or stimulant use, death may occur through various mechanisms, particularly cardiac and respiratory causes. Suppose the possible mechanisms of various substances causing death are examined. In that case, it can be suggested that arrhythmia occurs with the stimulant effect of amphetamine derivatives, myocardial infarction, cerebral hemorrhage, and dissecting aortic aneurysm rupture with the vasoconstrictor effect of cocaine, and respiratory suppression and death occur with the depressant effect of opioids (DiMaio & Molina, 2021).

No specific findings are typically observed at autopsy in cases of death resulting from drug or stimulant intoxication. Injection marks observed during external examination and tattoos indicative of substance use serve as markers for the physician (Koç, 1999). Nonspecific findings such as hyperemia, edema, and petechial hemorrhage may be detected in the organs, and occasionally these findings may explain the terminal events leading to death. A definitive diagnosis can be established through toxicological analysis of biological samples (Saukko, 2015).

Although it is very important to know the medical causes of death because of substance use or substance properties, revealing the biopsychosocial causes of the use disorder that causes death will help us better understand the user-use relationship (Hellman et al., 2015). Social service intervention plays an important role in combating SUD by providing resources and assistance to individuals struggling with substance addiction to overcome their addiction (Asan et al., 2015). These programs can offer a wide range of services such as therapeutic interventions, rehabilitation facilities, and access to medical care. However, substance abuse is often a multifaceted problem that requires a comprehensive approach, and social work programs need to collaborate with other health professionals and community agencies to address the various factors contributing to addiction. With appropriate support and resources, individuals struggling with substance addiction can overcome their addiction and achieve permanent recovery (Schneider, 2009).

The fight against substance use disorder, which has been increasing in recent years, requires a multidisciplinary approach. Factors that cause addiction, the environment that facilitates addiction, and the harms that occur because of substance use are issues that cannot be separated from each other. With this study, it will be possible to examine the psychosocial dimensions of the substance use experience resulting in death. Another aim of the study is to make inferences about the relationship between family relations, family structure, socioeconomic status, and substance use. Therefore, our study aims to examine the forensic, medical, and social aspects of deaths caused by high-dose drug or stimulant use with a holistic approach, and to discuss how these deaths can be prevented together with the literature.

Material and Methods

Sample
The autopsy findings and forensic investigation files of cases where the cause of death was determined as drug or stimulant intoxication were reviewed. These autopsies were conducted at the Morgue Specialization Department of the Council of Forensic Medicine in 2021. In 2021, 5458 autopsies were performed, and lethal doses of drugs or stimulants were detected in 1.7% ($n = 97$) of the cases, and no other cause of death was found.

Procedure
The study complied with the Declaration of Helsinki, and permission was obtained from the Educational and Scientific Research Commission of the Council of Forensic Medicine with the decision dated December 5, 2022, and numbered 2022/1069. The data, including sociodemographic characteristics of the relevant cases, death examination minutes, autopsy findings, cause of death, and morphological and chemical examination results, were obtained from the electronic archive files of the Department of Morgue Specialization of the Council of Forensic Medicine of the Presidency of the Council of Forensic Medicine via the UYAP system. UYAP is a software program that operates throughout the organization of the Ministry of Justice and judicial units in Türkiye, facilitating all kinds of judicial, administrative, and audit activities electronically (Kuzu, 2011).

Statistical Methods
All statistical analyses were performed with IBM Statistical Package for Social Sciences version 28.0 (IBM SPSS Corp.; Armonk, NY, USA). Descriptive characteristics were given as mean $\pm$ standard deviation (SD) in normally distributed groups and as median (minimum – maximum) for non-normally distributed groups. In categorical data, descriptive statistics are given as percentages. Groups were compared using the Chi-squared test for categorical variables. Statistical significance level was accepted as $p < .05$.

Results

In our study, out of 97 cases where the cause of death was attributed to drug or stimulant overdose, two cases whose place of death was not Istanbul were excluded, leaving 95 cases included in the study. When analyzing the sociodemographic characteristics of these 95 cases, it was found that 92.6% ($n = 88$) were male and 7.4% ($n = 7$) were female. The age range was 17 – 64 years, with a mean age of 35.5 ($\pm$11.33). Additionally, 84.2% ($n = 80$) were Turkish nationals, while 15.8% ($n = 15$) were foreign nationals.

An identity witness is a person who is used by the judicial authorities to identify the deceased and to obtain information after

death. An analysis of the death investigation reports showed that the identity witness was a family member in 33.7% ($n = 32$) of cases, a relative in 23.1% ($n = 22$) of cases, a friend in 17.9% ($n = 17$) of cases, and other persons in 5.3% ($n = 5$) of cases. No witness could be found in one in five cases. The place of death was found to be on the European side of Istanbul in 80% ($n = 76$) of the cases and on the Asian side of Istanbul in 20% ($n = 19$) of the cases. It was observed that 58.9% ($n = 56$) of the deaths occurred at home, 15.8% ($n = 16$) on the street, 13.7% ($n = 13$) in other places (abandoned building-mosque-toilet-workplace), and 11.6% ($n = 11$) in a hotel. When analyzing the cases without an identity witness ($n = 19$), 36.8% of the incidents occurred at home, 15.8% in a hotel, 26.3% in the street, and 21.1% in other places. As a result of the crime scene investigations and the statements taken, it was determined that 66.3% ($n = 63$) of the cases used drugs or stimulants individually, and 10.5% ($n = 10$) used them collectively. There is no information available regarding the usage status in 23.2% ($n = 22$) of the cases. Sociodemographic characteristics and investigation information of the cases are detailed in Table 1.

External examination revealed that 36.8% ($n = 35$) of the cases had self-mutilation marks, and 47.4% ($n = 45$) had tattoos. Chemical analyses of blood samples taken at autopsy revealed amphetamine derivatives in 60% ($n = 57$), morphine in 35.8% ($n = 34$), heroin in 28.4% ($n = 27$), synthetic cannabinoids in 25.3% ($n = 24$), and cocaine in 17.9% ($n = 17$). The cause of death was determined as polysubstance use in 52.6% ($n = 50$) and amphetamine derivatives in 28.4% ($n = 27$) of the cases. Table 2 shows the substances found in the blood and the causes of death according to the results of the toxicological analyses.

When examining the association between place of death and cause of death, it was found that 70.5% of deaths occurred at the home or in hotels. Only in cases where the cause of death was a

Table 1.
Sociodemographic Characteristics and Investigation Information of the Sample

Variables		n	%
Age (mean ± SD)		35.5	11.33
Gender	Male	88	92.6
	Female	7	7.4
Nation	Türkiye	80	84.2
	Foreign	15	15.8
Location of Istanbul	Europe	76	80
	Asia	19	20
İdentity witness	Family member	32	33.7
	Relative	22	23.1
	No identity witness	19	20
	Friend	17	17.9
	Other	5	5.3
Place of death	Home	56	58.9
	Street	15	15.8
	Hotel	11	11.6
	Others	13	13.7

Table 2.
Results of Toxicological Analysis

		n	%
	Amphetamine derivatives	57	60
Substance detected in blood	Morphine	34	35.8
	Heroin	27	28.4
	Synthetic cannabinoid	24	25.3
	Cocaine	17	17.9
	Other opioid	3	3.2
Cause of death	Polysubstance use	50	50.5
	Amphetamine derivatives	27	30.5
	Synthetic cannabinoid	8	8.4
	Cocaine	7	7.4
	Morphine	3	3.2

synthetic cannabinoid were deaths in the street and other places higher than deaths in the home – hotel.

Upon examining the relationship between the number of substances leading to death and the corresponding substance types found in toxicological analyses, it was evident that instances involving morphine and heroin detection had a statistically significant increase in the use of polysubstances ($p < .001$). No significant difference was noted for other types of substances. A more detailed description is given in Table 3.

The development ranking list of the districts in Istanbul, made by the General Directorate of Development Agencies of the Ministry of Industry and Technology of the Republic of Türkiye, which was formed by examining 36 variables consisting of demographic, education, health, finance, competitiveness, innovation, quality of life, employment, and social security variables, was examined by dividing them into four groups according to the scores they

Table 3.
Polysubstance and Single Substance Use Prevalence by Substance Type

		Polysubstance		Single Substance		
		n	%	n	%	p
Amphetamine derivatives	Yes	30	31.5	27	28.4	1.00
	No	20	21.1	18	19	
Morphine	Yes	31	31.6	3	4.2	<.001
	No	19	18.9	42	45.3	
Heroin	Yes	27	28.4	0	0	<.001
	No	23	22.1	45	49.5	
Synthetic cannabinoid	Yes	16	15.8	8	10.5	.111
	No	34	23.2	37	51.6	
Cocaine	Yes	10	10.5	7	7.4	.573
	No	40	27.4	38	54.7	
Other opioid	Yes	3	3.2	0	0.0	.244
	No	47	47.3	45	49.5	

Table 4.
Socioeconomic Grouping of Districts

Grouping	Districts
Group 1 (>4500 score)	Şişli, Beşiktaş, Kadıköy
Group 2 (3000 – 4500 score)	Bakırköy, Fatih, Ataşehir, Başakşehir, Beyoğlu, Ümraniye, Sarıyer, Üsküdar,
Group 3 (1500 – 3000 score)	Tuzla, Maltepe, Beylikdüzü, Pendik, Esenyurt, Bahçelievler, Zeytinburnu, Bağcılar, Kartal, Bayrampaşa, Kağıthane, Küçükçekmece, Güngören, Büyükçekmece, Eyüpsultan, Adalar, Beykoz, Avcılar
Group 4 (0 – 1500 score)	Gaziosmanpaşa, Çekmeköy, Esenler, Silivri, Sancaktepe, Sultangazi, Arnavutköy, Çatalca, Şile, Sultanbeyli

received (Acar et al., 2022). The socioeconomic classification of the district is shown in Table 4. Drug or stimulant-related deaths were most prevalent in districts within the third group, accounting for 48.4% of cases. However, when the population ratio is considered, districts in group 1 rank first with a ratio of 16.8 per 100 thousand inhabitants. Polysubstance, amphetamine derivatives, and morphine-related deaths were predominantly concentrated in the third and fourth group districts, whereas cocaine-related deaths were mostly concentrated in the first and second group districts. The socioeconomic grouping of districts' death counts and substances causing death are presented in Tables 5 and 6.

Discussion

Substance use disorder and substance-related deaths continue to pose a public health problems that has become more serious over time (Işık, 2013). The cultural disparities relating to substance use disorders and substance-related deaths are diminishing over time because of globalization. This trend is particularly evident in cosmopolitan regions such as metropolises (Saykal, 2022). In this study, we analyzed substance-related deaths in a metropolis such as Istanbul, which acts as a geographic and cultural bridge between Europe and Asia. The current text already adheres to the principles. To our knowledge, our study represents the most recent and comprehensive publication examining substance-related deaths within this geographical location.

Our findings indicated that most substance-related deaths were male, with a mean age of 35.5 ($\pm$11.33) years, consistent with the literature. Research indicates that young males are particularly vulnerable to substance-related deaths (Kariisa et al., 2019). The increased usage of substances among males can be attributed to several factors, such as easier access to these substances and a tendency toward risk-taking behaviors that are prevalent in many male-dominated cultures (Dissabandara et al., 2009). In many cultures, the definition of masculinity is frequently linked to traits such as "toughness" or "indifference," which could result in less careful conduct in substance intake. Nonetheless, it should be noted that the use of substances is not exclusive to men. Women may also consume certain types of substances at equivalent or even greater levels than men (United Nations Office on Drugs and Crime, 2021). Therefore, it is essential for substance use and addiction research to consider substance categories and gender differences, while also offering tailored treatment options for both genders.

The study revealed that most cases (66.3%) consumed drugs or stimulants individually. In contrast, a smaller proportion (10.5%) reported using the substances communally. This suggests that drug use is predominantly an individualistic behavior and that collective use is less popular. Individual use may heighten the danger of overdosing and decrease the likelihood of receiving assistance in the event of an overdose. Individual drug use can also be a preferred means for substance users to avoid engagement with the community. This has been supported by several studies that demonstrate a correlation between substance use and social isolation (Halsall et al., 2022).

Table 5.
Case Numbers by Socioeconomic Grouping of Districts

	Population*	Case	Case/Population**
Group 1	948.465	16	16.8
Group 2	3.377.652	16	4.7
Group 3	8.279.625	46	5.5
Group 4	3.235.125	17	5.2

Note: *2021 data from the Turkish Statistical Institute.
**per 100,000 people.

It was discovered that most deaths occurred at home, on the streets, and in hotels, respectively. The data divulge that fatalities caused by drug use and its aftermath primarily transpire in private residences. The most substantial proof of this situation is that over 50% of the fatalities transpired at home. Substance use in the abode often affords the user a sense of security and enables avoidance of the plausible social hazards linked to drug

Table 6.
Substance Causing Death by Socioeconomic Grouping of Districts

		Socioeconomic Classification of Districts				
		Group 1	**Group 2**	**Group 3**	**Group 4**	**Total**
Cause of death	Polysubstance	9	6	27	8	50
	Amphetamine derivatives	2	5	14	6	27
	Synthetic cannabinoid	1	3	2	2	8
	Cocaine	4	2	1	0	7
	Morphine	0	0	2	1	3

use. What is more, the home furnishes privacy to the user and diminishes the conceivable societal disapproval linked to drug use (Riley et al., 1999). This situation aligns with the notion that drug users feel secure and unsupervised when consuming narcotics in their homes. It is plausible that fewer drug-related fatalities occur in public settings like hotels and streets due to the presence of a robust social support network and potential intervention (Riley et al., 1999).

It is proposed that drug or stimulant users experience weakened family relations, leading to a gradual withdrawal from family and social life as usage intensifies. These weakened ties and social withdrawal may contribute to the person's substance use disorder becoming irreversible (Gruber & Taylor, 2006). The witness who participated in the identification process during the death examination report can provide valuable data illustrating the family relationships of the deceased. These findings support the claim that substance use disorder weakens family relationships.

Previous studies suggest that drugs or stimulants are more commonly used in abandoned places, but it is now believed that individuals frequently use drugs in their own homes due to increased inspections to prevent drug use in abandoned areas and rehabilitation efforts implemented by local authorities (Kamil & Tuncay, 2020). Consistent with the literature, our study found that most substance-related fatalities in Istanbul during 2021 took place at home.

A study in Istanbul between 1990 and 2000 found that heroin use accounted for 97.3% of drug-related deaths (Toprak et al., 2007). Our study analyzed substance-related deaths in 2021 and found that polysubstance use was the most common cause. The observed changes in substance use habits, the emergence of new substances, and an increase in their availability were among the contributing factors. Amphetamine derivative-related deaths ranked second, with heroin-related deaths decreasing to third place. The rise in deaths caused by isolated amphetamines and their easy access suggest a significant risk to public health. Also, it was determined in our study that all heroin users were also using another substance. This could be an important indication of current substance use habits and the substances being used. However, the metabolization of heroin into morphine complicates the evaluation of polysubstance use, as there is a combination of both heroin and morphine detected in the blood.

Forensic autopsies in Türkiye are routinely investigated for the presence of drugs and stimulants in the blood. In Izmir, drugs or stimulants were detected in 6% ($n = 449$) of 7475 autopsy cases performed between 2015 and 2017. The analysis of the detected substances showed that 34.29% were positive for cannabis, 25.38% were positive for polysubstance, 19.59% were positive for amphetamine derivatives, and 12.69% were positive for synthetic cannabinoids (Tunçez et al., 2022). In our investigation, amphetamine derivatives were present in 60% ($n = 57$) of cases in which drugs or stimulants were the cause of death, morphine in 35.8% ($n = 34$), heroin in 28.4% ($n = 27$), and synthetic cannabinoids in 25.3% ($n = 24$). Considering that cannabis is not lethal, the results of the two studies are consistent.

Substance abuse and related deaths have become a major public health problem worldwide. Both socioeconomic status and drug use preferences have a significant impact on the variety and frequency of these deaths, as evidenced by several studies. It is commonly acknowledged that socioeconomic status constitutes a significant factor that shapes overall substance usage. Individuals from lower socioeconomic backgrounds are typically exposed to various risk factors, including unemployment, low educational attainment, poverty, and social challenges. These factors increase the likelihood of substance use, particularly when socioeconomic difficulties like poverty, stress, and social isolation make using such substances a coping mechanism (Çakır et al., 2022; Havassy et al., 2004; Henkel, 2011). A significant relationship has also been found between socioeconomic status and substance preferences. Individuals with lower socioeconomic status tend to favor less expensive and easily obtainable substances, whereas those with higher socioeconomic status prefer more expensive and socially acceptable substances (Patrick et al., 2012). According to a report from 2016 to 2017, fatalities resulting from the use of substances containing cocaine were more prevalent in developed areas of the United States, while fatalities caused by other psychostimulant substances were more common in less developed regions. During the opioid epidemic in the United States of America, it became clear that communities with low socioeconomic status experienced a significant increase in deaths due to overdose (Ciccarone, 2019). Our study found that districts with high socioeconomic status had deaths attributable to cocaine use, while deaths due to amphetamine derivatives and heroin use were observed in districts with low socioeconomic status. In this regard, our findings align with the existing literature. The present relationships impact both the variety and distribution of fatalities caused by substance abuse, encompassing variations in drug-type lethality (Pullen & Oser, 2014).

Individuals with low socioeconomic status encounter more challenges when attempting to acquire the resources and healthcare services required to mitigate the consequences of drug use. This creates a greater danger of fatality (Mennis & Stahler, 2016). Thus, socioeconomic status constitutes a vital determinant across all phases, ranging from the impetus behind drug use to a potential predilection for certain drug categories, from fatalities resulting from drug use to accessibility to drug treatment services. Developing a comprehensive understanding of these interrelationships is crucial to optimizing psychosocial interventions and minimizing the effects of substance abuse. The existing literature contributes to this understanding by revealing how socioeconomic factors and substance preferences are implicated in these fatalities. Notwithstanding, further investigation is necessary, especially at the regional level, examining dissimilarities among distinct demographic cohorts and varieties of substances. In this study, deaths due to substance use in Istanbul in 2021 were evaluated, and it was observed that these deaths were most frequently due to amphetamine derivatives, morphine, heroin, synthetic cannabinoids, and cocaine. Polysubstance use and amphetamine derivatives are the most common causes of death. The increase in deaths due to amphetamine derivatives is particularly striking. Easy access to amphetamine derivatives may be a reason for this. Deaths due to drug use tend to occur individually during drug use and are concentrated in private places such as homes and hotels. As a result of surveillance and successful safety policies, the number of deaths in public and abandoned places is low. In addition, the social isolation of people with substance

use disorders reduces the applicability of anti-drug strategies and limits the possibility of timely medical intervention in cases of overdose. In conclusion, the increase in drug-related deaths in Istanbul is a public health problem that requires urgent action. Easy access to amphetamine derivatives and polysubstance use are among the main factors leading to deaths. This situation calls for the development and implementation of more effective strategies to prevent drug abuse. Strengthening preventive health services, expanding early intervention programs, and increasing social support mechanisms for drug users will play a crucial role in preventing these deaths. In addition, facilitating access to treatment for substance abusers and raising awareness in society should be among the most important steps to be taken in this area. In this context, a multidisciplinary approach should be adopted, and a holistic strategy developed in cooperation with the health, education, and security sectors. These strategies, implemented in a spirit of social mobilization, will ensure long-term success in reducing drug-related deaths and combating addiction.

Limitations and Directions/Suggestions for Future Research

Our research has limitations such as its retrospective design, small sample size, limited access to the medical histories of the cases, and insufficient information on substance use habits in the statements. Therefore, it is necessary to conduct large-scale, prospective, and controlled studies that collect large amounts of data from the relatives of the deceased after autopsy and include their medical records.

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Genişletilmiş Özet

Madde Bağımlılığı Ölümleri ve Sosyoekonomi: İstanbul'un İlçeleri Üzerine Karşılaştırmalı Bir Çalışma

Giriş

Madde kullanım bozukluğu, bireysel ve toplumsal sağlığın sürdürülebilirliğini tehdit eden, geniş kapsamlı olumsuz sonuçları olan kompleks bir sağlık sorunudur. Kullanıcıların fiziksel ve psikolojik sağlığını doğrudan etkilerken, aile arası ilişkiler, iş verimliliği ve sosyal uyum gibi makro düzeyde sosyal parametreler üzerinde de yıkıcı etkilere yol açmaktadır. Madde kullanımının yol açtığı sağlık sorunları, tedavi edici sağlık hizmetlerine olan talebi artırırken, suç oranlarının yükselmesine ve ekonomik kayıplara neden olmaktadır. Bu bağlamda, madde kullanım bozukluğunun çok boyutlu olumsuz etkilerini ele almak, multidisipliner bir yaklaşım gerektiren aciliyet arz eden bir konu olarak öne çıkmaktadır. Birleşmiş Milletler Uyuşturucu ve Suç Ofisi'nin 2022 Dünya Uyuşturucu Raporu'na göre uyuşturucu veya uyarıcı kaynaklı ölümlerin %77'sine opioidlerin, %7'sine amfetamin türevlerinin, %4'üne kokainin, %4'üne kannabinoidlerin, %2'sine sedatif ve hipnotik maddelerin, %2'sine halüsinojenlerin, %2'sine yeni psikoaktif maddelerin ve %2'sine diğer maddelerin neden olduğu bilinmektedir.

Bağımlılığı tetikleyen etmenler, maddeye erişimi kolaylaştıran çevresel faktörler ve madde kullanımı sonucu ortaya çıkan zararlar birbirinden ayrılamayacak konulardır. Madde kullanımı veya madde özellikleri nedeniyle gerçekleşen ölümlerin tıbbi nedenlerinin bilinmesi çok önemli olmakla birlikte, ölüme neden olan kullanım bozukluğunun biyopsikososyal nedenlerinin ortaya çıkarılması kullanıcı-kullanım ilişkisinin daha iyi anlaşılmasına yardımcı olacaktır. Bu çalışma ile ölümle sonuçlanan madde kullanım deneyiminin psikososyal boyutlarını incelemek mümkün olacaktır. Çalışmanın bir diğer amacı da aile ilişkileri, aile yapısı sosyoekonomik durum ve madde kullanımı arasındaki ilişki hakkında çıkarımlarda bulunmaktır. Dolayısıyla çalışmamız, yüksek doz uyuşturucu veya uyarıcı madde kullanımına bağlı ölümlerin adli, tıbbi ve sosyal boyutlarını bütüncül bir yaklaşımla incelemeyi hedeflemektedir.

Yöntem

Adli Tıp Kurumu Morg İhtisas Dairesi'nde 2021 yılında yapılan otopsilerde ölüm nedeni uyuşturucu veya uyarıcı madde intoksikasyonu olarak tespit edilen olguların otopsi bulguları ve adli tahkikat dosyası birlikte değerlendirilmiştir. 2021 yılında 5458 otopsi yapılmış olup, olguların %1,7'sinde ($n = 97$) ölümcül dozda uyuşturucu veya uyarıcı madde tespit edilmiş ve başka bir ölüm nedeni bulunamamıştır. Çalışmada Helsinki Bildirgesi'ne uyulmuş ve Adli Tıp Kurumu Eğitim ve Bilimsel Araştırma Komisyonu'ndan 05/12/2022 tarih ve 2022/1069 sayılı karar ile izin alınmıştır. İlgili olguların sosyodemografik özellikleri, ölüm muayene tutanakları, otopsi bulguları, ölüm nedeni, morfolojik ve kimyasal inceleme sonuçlarını içeren veriler Adli Tıp Kurumu Başkanlığı Morg İhtisas Dairesi elektronik arşiv dosyalarından UYAP sistemi aracılığıyla elde edilmiştir. Tüm istatistiksel analizler IBM Statistical Package for Social Sciences (SPSS) versiyon 28.0 ile gerçekleştirilmiştir.

Bulgular

Çalışmamızda ölüm nedeni aşırı dozda uyuşturucu veya uyarıcı madde olarak bildirilen 97 olgudan ölüm yeri İstanbul olmayan 2 olgu çalışma dışı bırakılmış ve 95 olgu çalışmaya dahil edilmiştir. Olguların sosyodemografik özellikleri incelendiğinde %92,6'sı erkek, %7,4'ü kadın, yaş aralığı 17-64, yaş ortalaması 35,5 ($\pm$11,33), %84,2'si Türk, %15,8'i yabancı uyrukludur.

Ölü muayene tutanaklarında yer alan kimlik tanığının olguların %33,7'sinde aile üyesi, %23,1'inde akraba, %17,9'unda arkadaş ve %5,3'ünde diğer kişiler olduğunu görülmektedir. Her beş olgudan birinde tanık bulunamamıştır. Ölümlerin %58,9'unun evde, %15,8'inin sokakta, %13,7'sinin diğer mekanlarda (metruk bina - cami tuvaleti - işyeri) ve %11,6'sının ($n = 11$) otelde gerçekleştiği bildirilmiştir. Olay yeri incelemeleri ve alınan ifadeler sonucunda olguların %66,3'ünün uyuşturucu veya uyarıcı maddeleri bireysel olarak, %10,5'inin ise toplu olarak kullandıkları tespit edilmiştir. Olguların %23,2'sinin kullanım durumuna ilişkin bilgi bulunmamaktadır.

Otopside alınan kan örneklerinin kimyasal analizlerinde %60'ında ($n = 57$) amfetamin türevleri, %35,8'inde (n=34) morfin, %28,4'ünde ($n = 27$) eroin, %25,3'ünde ($n = 24$) sentetik kannabinoidler, %17,9'unda ($n = 17$) kokain tespit edilmiştir. Ölüm nedeni olguların %52,6'unda ($n = 50$) çoklu madde kullanımı ve %28,4'sinde ($n = 27$) amfetamin türevleri olarak belirlenmiştir. Ölüm yeri ve ölüm nedeni arasındaki ilişki incelendiğinde, ölümlerin %70,5'inin ev-otelde gerçekleştiği görülmüştür.

Kalkınma Ajansları Genel Müdürlüğü tarafından yapılan ve demografik, eğitim, sağlık, finans, rekabetçilik, yenilikçilik, yaşam kalitesi, istihdam ve sosyal güvenlik değişkenlerinden oluşan 36 değişkenin incelenmesiyle oluşturulan İstanbul'daki ilçelerin gelişmişlik sıralaması listesi, aldıkları puanlara göre 4 gruba ayrılarak incelenmiştir. Uyuşturucu veya uyarıcı madde bağlantılı ölümler, olguların %48,4'ünü oluşturan üçüncü gruptaki ilçelerde en yaygındır. Ancak nüfus oranı dikkate alındığında, 1. gruptaki ilçeler 100 bin kişi başına 16,8'lik oranla ilk sırada yer almaktadır. Çoklu madde, amfetamin türevleri ve morfine bağlı ölümler ağırlıklı olarak üçüncü ve dördüncü grup ilçelerde yoğunlaşırken, kokaine bağlı ölümler birinci ve ikinci grup ilçelerde yoğunlaşmaktadır.

Tartışma ve Sonuç

Bu çalışmada 2021 yılında İstanbul'da madde kullanımına bağlı ölümler değerlendirilmiş ve bu ölümlerin en sık çoklu madde kullanımı ve amfetamin türevlerine bağlı olduğu görülmüştür. Amfetamin türevlerine bağlı ölümlerdeki artış özellikle dikkat çekicidir. Amfetamin türevlerine erişimin kolay olması bunun bir nedeni olabilir. Uyuşturucu kullanımına bağlı ölümler, uyuşturucu kullanımı sırasında bireysel olarak gerçekleşme eğilimindedir ve ev ve otel gibi özel yerlerde yoğunlaşmaktadır. Gözetim ve başarılı güvenlik politikalarının bir sonucu olarak, kamuya açık ve terk edilmiş yerlerde meydana gelen ölümlerin sayısı düşüktür. Ayrıca, madde kullanım bozukluğu olan kişilerin sosyal izolasyonu, uyuşturucu karşıtı stratejilerin uygulanabilirliğini azaltmakta ve aşırı doz olgularında zamanında tıbbi müdahale olasılığını sınırlamaktadır. Sonuç olarak, İstanbul'da uyuşturucuya bağlı ölümlerdeki artış acil eylem gerektiren bir halk sağlığı sorunudur. Amfetamin türevlerine kolay erişim ve çoklu madde kullanımı ölümlere yol açan başlıca faktörler arasındadır. Bu durum, uyuşturucu kullanımını önlemek için daha etkili stratejilerin geliştirilmesini ve uygulanmasını gerektirmektedir. Koruyucu sağlık hizmetlerinin güçlendirilmesi, erken müdahale programlarının yaygınlaştırılması ve uyuşturucu kullanıcılarına yönelik sosyal destek mekanizmalarının artırılması bu ölümlerin önlenmesinde önemli bir rol oynayacaktır. Ayrıca madde bağımlılarının tedaviye erişiminin kolaylaştırılması ve toplumda farkındalığın artırılması bu alanda atılacak en önemli adımlar arasında yer almalıdır. Bu kapsamda multidisipliner bir yaklaşım benimsenmeli, sağlık, eğitim ve güvenlik sektörlerinin iş birliği ile bütüncül bir strateji geliştirilmelidir. Toplumsal seferberlik ruhuyla uygulanacak bu stratejiler, uyuşturucuya bağlı ölümlerin azaltılmasında ve bağımlılıkla mücadelede uzun vadeli başarı sağlayacaktır.