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Abstract

Background: The COVID-19 pandemic caused people to stay indoors, resulting in social isolation and reluctance to access healthcare services in hospitals because of the fear of acquiring COVID-19. This fear caused a decrease in health service utilization during the pandemic.

Aims: To compare paediatric forensic cases admitted to an emergency department before and during the COVID-19 pandemic.

Methods: We retrospectively compared the age, sex, type, frequency, and distribution of forensic cases admitted to the Paediatric Emergency Department of Umraniye Training and Research Hospital, Istanbul, Türkiye, before the COVID-19 pandemic between 1 July 2019 and 8 March 2020, and during the pandemic between 9 March and 31 December 2020.

Results: There were 226 paediatric forensic cases among 147 624 emergency admissions before the COVID-19 pandemic, and 253 among 60 764 admissions during the pandemic. The proportion of forensic cases increased from 0.15% before the pandemic to 0.41% during the pandemic. Intoxication by accidental ingestion was the most common reason for forensic cases

before and during the pandemic. There was a significant increase in ingestion of corrosive material during the pandemic compared to the pre-pandemic period.

Conclusion: Parental anxiety and depression caused by the COVID-19 pandemic and lockdown resulted in decreased attention to childcare, leading to increased accidental ingestion of harmful materials among paediatric forensic cases admitted to the emergency department.

Keywords: forensic, emergency, paediatric, COVID-19, pandemic, pre-pandemic, healthcare, intoxication, Türkiye

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Introduction

Forensic cases refer to physical or mental disorders in persons who are passively or actively affected by the deliberate actions, imprudence, or neglect of other persons (1). In Türkiye, most forensic cases are reported in emergency departments, and are caused by traffic accidents, falls from high places, intoxication, burns, drug ingestion, electrical shock, penetrating injuries, sharp object wounds, sexual abuse, and attempted suicide (1, 2).

Online learning at home due to the closure of schools during the COVID-19 pandemic lockdown caused social isolation and decreased physical activities among children and adolescents.

This study investigated whether social isolation of children led to a decrease in the proportion of forensic cases during the pandemic. We compared the forensic cases in a paediatric emergency department in Türkiye before and during the COVID-19 pandemic.

Methods

Study design

We retrospectively compared the age, sex, type, frequency, and distribution of forensic cases admitted to the Pediatric Emergency Department, Umraniye Training and Research Hospital, Istanbul, Türkiye, before the COVID-19 pandemic between 1 July 2019 and 8 March 2020, and during the pandemic between 9 March and 31 December 2020. Children whose injuries were caused by traffic accidents, penetrating wounds, falls, gunshots, or traumatic wounds were excluded because they would have been followed up as surgical emergencies. The study protocol was approved by Hamidiye Scientific Research Ethics Committee (protocol number 21/116).

Statistical analysis

SPSS version 25.0 was used for statistical analysis. For quantitative data, Student's t test was used to compare normally distributed variables. The Mann–Whitney U test was used to compare non-normally distributed variables. The chi-square and Fisher's exact tests were used to analyse associations among categorical variables. P

Results

The number of children admitted to the Pediatric Emergency Department decreased significantly from 147 624 before the COVID-19 pandemic to 60 764 during the pandemic (P

Before the COVID-19 pandemic, Türkiye, the forensic cases were most frequently caused by intoxication (80.5%), suicide attempts (6.2%), and sexual abuse (3.5%) (Table 1). During the pandemic, the most common causes of forensic cases were intoxication (82.4%), ingestion of harmful materials (5.1%), and burns (3.5%). The number of suicide attempts was significantly higher before (6.2%) than during (0.8%) the pandemic (P
Table 2
). There was a significantly higher rate of corrosive substance ingestion during than before the pandemic (33.8% vs 21.4%) (P

There were 118 (52.2%) females and 108 (47.8%) males admitted to the Pediatric Emergency Department before the COVID-19 pandemic. During the pandemic, the number of females increased to 132 (52.5%) (P = 0.313) and the number of males increased to 121 (47.5%) (P = 0.390). The mean age of forensic cases (both sexes) decreased significantly from 7.42 (6.46) years before the pandemic to 6.33 (6.21) during the pandemic (P = 0.048).

Discussion

The COVID-19 pandemic has had a major impact on the lives of children, adolescents, and their parents, as a result of closure of educational institutions and absence of leisure activities for children, and parents working at home. The fear of contracting COVID-19 had a negative impact on mental health, and may have prevented people from attending emergency departments (5). We found that the overall number of paediatric emergency cases at the Pediatric Emergency Department, Umraniye Training and Research Hospital, Istanbul, Türkiye, declined from 147 624 before the COVID-19 pandemic to 60 764 during the pandemic. Although the proportion of forensic cases among all paediatric emergency cases increased from 0.15% to 0.41% during the pandemic, there was no significant difference in overall number of forensic cases (253 during and 226 before the pandemic).

We found an increase in accidental ingestion of toxic substances by children during the COVID-19 pandemic; probably because they stayed at home for longer periods and had a higher risk of coming in contact with harmful materials. Another contributing factor may have been parental depression due to the pandemic and lockdown that resulted in decreased parental awareness and control of their children's actions and behaviours.

The number of suicide attempts was significantly higher before (6.2%) than during (0.8%) the COVID-19 pandemic. Previous studies have reported that the pandemic resulted in less time outdoors, fewer social interactions, and social isolation, which had a negative effect on mental health, causing depression, anxiety, psychomotor agitation, substance abuse, and suicide attempts (6–10). In contrast, we think that spending less time outdoors may have resulted in parents paying more attention to their children's behaviour and developing close relationships with them. This in turn improved children's mental health and led to fewer suicide attempts.

We found that alcohol consumption did not differ significantly during the COVID-19 pandemic (9.3%) than before the pandemic (8.1%). Substance abuse significantly decreased to 1% during the pandemic, compared with 4.4% in the pre-pandemic period. However, our results differed from those in previous studies. Vanderbruggen et al. found that lack of social contacts and loneliness were some of the main reasons for increased substance abuse during lockdown, and that younger age was associated with increased alcohol consumption (11). In a large study with teenagers in Canada, there was an overall increase in the frequency of alcohol consumption, although the increase was significant only for females (12). Sanchez et al. found that younger age was associated with increased alcohol consumption during lockdown, and that drug use was more common among people aged 15–24 years than among older people (13). Two other studies reported that use of cannabis and other substances was more frequent among young adults than older people (14,15). Luca et al. found that admissions to 2 psychiatric hospitals in

Romania related to alcohol consumption increased between January–February and March–May 2020 (16). Glober et al. found an increase in deaths related to substance use and drug overdose (17), and Slovova et al. reported a 50% increase in emergency admissions because of opioid overdose (18). In contrast with these studies, we did not find an increase in deaths related to substance use or alcohol consumption, which may have been related to the ban of liquor sales to adolescents and limited access to hard drugs in Türkiye

The COVID-19 pandemic had many adverse effects on mental health, causing anxiety, depression, post-traumatic stress disorder, hopelessness, social isolation, self-harm, and suicide; all of which affected health-related behaviour and increased consumption of alcohol and other substances (19–23).

In our study, intoxication was the most commonly seen cause of paediatric forensic cases among emergency department arrivals during the COVID-19 pandemic. Among the types of intoxication, accidental ingestion of corrosive substances by young children was more frequently seen during than before the pandemic. As stated above, it is possible that anxiety and depression caused by the pandemic and lockdown made parents less attentive, making it easier for young children to accidentally come in contact with and ingest harmful materials. Grigoletto et al. reported an increase in emergency department attendance by adolescents and young adults with severe alcohol intoxication, which was a serious risk for mental health problems during lockdown (24). Among people admitted to emergency departments for severe alcohol intoxication after the lockdown, 68% were male and median age was 17 years, with 16–18 years the most frequent age range. They presented with combined intake of alcohol and drugs, mainly cannabinoids.

For many young people the COVID-19 pandemic meant developing new, or changing, habits. Instead of spending time with peers, adolescents spent all their time with their parents at home. There was a dramatic change to online mode of education and not everyone had sufficient access to the digital technology, and this made some adolescents anxious about their academic success in the long-term (25). Although lockdown had negative impacts on education, good parenting should have helped strengthen family bonds and improve adolescents' mental health.

Conclusion

In this study, we found that the number of children admitted to a paediatric emergency department in Istanbul decreased significantly during the COVID-19 pandemic. The proportion of forensic cases among the admissions increased during the pandemic, although this increase was not significant. We found no change in alcohol consumption but a decrease in substance use and suicide attempts during the pandemic, compared to pre-pandemic period. This study

found an increase in accidental ingestion of harmful substances among young children who were under parental care during the pandemic. The effects of the pandemic and lockdown on parental behaviour and interaction with their children would be better analysed at the end of pandemic.

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Competing interests: None declared.

Effets de la pandémie de COVID-19 sur les cas médico-légaux dans un service d'urgence pédiatrique en Türkiye

Résumé

Contexte : La pandémie de COVID-19 a poussé les gens à rester chez eux, entraînant un isolement social et une réticence à accéder aux services de santé dans les hôpitaux par crainte de contracter la COVID-19. Cette peur s'est traduite par une baisse du recours aux services de santé pendant la pandémie.

Objectifs : Comparer les cas médico-légaux pédiatriques admis dans un service d'urgence avant et pendant la pandémie de COVID-19.

Méthodes : Nous avons comparé rétrospectivement l'âge, le sexe, le type, la fréquence et la répartition des cas médico-légaux admis aux services des urgences pédiatriques de l'hôpital de formation et de recherche d'Umraniye à Istanbul (Türkiye) avant la pandémie de COVID-19 entre le 1er juillet 2019 et le 8 mars 2020 ainsi que pendant la pandémie entre le 9 mars et le 31 décembre 2020.

Résultats : Il y a eu 226 cas médico-légaux pédiatriques parmi 147 624 admissions aux urgences avant la pandémie de COVID-19 et 253 parmi 60 764 admissions pendant la pandémie. La proportion de cas médico-légaux est passée de 0,15 % avant la pandémie à 0,41 % pendant la pandémie. L'intoxication par ingestion accidentelle était la cause la plus courante des cas médico-légaux avant et pendant la pandémie. Il y a eu une augmentation significative de l'ingestion de matières corrosives au cours de la pandémie par rapport à la période pré-pandémique.

Conclusion : L'anxiété et la dépression parentales causées par la pandémie de COVID-19 et le confinement ont entraîné une diminution de l'attention portée aux soins des enfants. Il en est résulté une augmentation de l'ingestion accidentelle de matériaux nocifs parmi les cas médico-légaux pédiatriques admis aux services des urgences.

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الاستنتاجات: أدت إصابة الآباء بالقلق والاكتئاب الناجمَين عن جائحة كوفيد-19
والإغلاق إلى تدنِّي الاهتمام برعاية الأطفال، الأمر الذي أفضى إلى زيادة الابتلاع
العرَضي للمواد الضارة بين حالات الأطفال الجنائية التي أُدخلت إلى قسم الطوارئ.

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