

The effect of COVID-19 Pandemic on the Trauma Admission

Shahideh Rostami ¹, Maryam Mehrizi ¹, Seyed Morteza Hosseiniara ¹, Alireza Jalali Farahani ², Jennifer Swann ³, Fatemeh Heidarzadeh ^{1*}

¹ Medical Student, Faculty of Medicine, Tehran Medical Sciences, Islamic Azad University, Tehran, Iran

² Professor of Cardiac Anesthesia, School of Medicine, Atherosclerosis Research Center, Baqiyatallah University of Medical sciences, Tehran, Iran

³ Ph.D., Professor, Department of Biological Sciences, 111 Research drive, Lehigh University, Bethlehem, PA 18015, USA

* **Corresponding Author:** Fatemeh Heidarzadeh, Faculty of Medicine, Tehran Medical sciences, Islamic Azad University, Tehran, Iran. **Email:** Heidarzadeh1522@gmail.com

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Dear Editor

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a respiratory virus from the beta-coronavirus family that causes coronavirus disease 2019 (COVID-19). The disease began in Wuhan, China in late 2019, has spread rapidly around the world, and remains a major health problem worldwide. The World Health Organization (WHO) declared COVID-19 a pandemic in March 2020, following an increase in the number of victims worldwide, to allow all countries to take strict measures to control the outbreak. There are, currently, about 200 million COVID-19 cases and more than 4 million deaths due to COVID-19 worldwide. COVID-19 has had many effects and consequences for all aspects of human societies. The disease impacts economics, public health, education, environmental, psychological, and even political and military institutions. Economically; many businesses have collapsed, and the resulting economic stress has led to mental disorders and increased domestic violence. Psychologically; stress, anxiety, and obsession have spread in communities, especially those of the medical staff. On the other hand, due to the busy schedule of medical staffers and the disruption of the provision of medical services to other patients, many patients have abandoned the normal process of periodic checkups after treatment, suggesting that, we will experience an increase in the presentation of chronic diseases in the not too distant future. Lockdowns and quarantines in response to the COVID-19 pandemic; have also affected the admission rate of trauma patients in numerous countries. Trauma is one of the leading causes of death in many parts of the world and

imposes costs on various communities that seem to have changed during the COVID-19 pandemic.¹

In the USA, cases of trauma admission and general surgery during the COVID-19 pandemic were evaluated over five two-week periods in 2020. The findings showed that the COVID-19 pandemic was associated with a significant reduction in the admission rate of trauma patients. Outbreaks of coronavirus in the United States, as in other countries; it has created numerous constraints. Closing schools, being forced to stay at home, social distancing, and quarantine laws have reduced people's movement in the community and changed their behavior, reducing the probability of trauma and injury. This reduction has been reported to be about 80% for motor vehicle collisions (MVC) trauma and about 45% for non-MVC trauma admissions. Although there has been a significant reduction in the number of trauma patients due to vehicle accidents and falling, there has been little difference in the number of trauma patients due to assault and pedestrian accidents. Of course, this reduction has not been the same in all hospitals and trauma centers. This decrease has been observed in those of 18 to 39 years and over 65 years, with a smaller decrease in patients of 40 to 64 years. The volume of general emergency surgery across the United States has not changed significantly, which is not surprising, since EGS trauma-related pathologies are not related to physical distance. Trauma from road accidents during the COVID-19 pandemic in the United States appears to be declining, but as restrictions continue, the rate of injury from domestic violence or self-injurious behavior (due to depression) may

be increasing, which is alarming.²

In Australia, social constraints and lockdown have had a significant impact on the extent and pattern of trauma admission during the COVID-19 pandemic. The average number of trauma admissions in 2020 showed a significant difference when compared to the years before the COVID-19 pandemic (from 2016 to 2019). Data was collected in Westmead Hospital in Sydney, Australia. The hospital is a level 1 adult major trauma center, providing care to a population of 1.5 million people. During March and April of the 2020 pandemic trauma admissions decreased by 34-34% compared to the same months in previous years. In addition, road casualties have decreased by 52-40% and the rate of falls has decreased by 13-20% primarily as a result of the reduction in road traffic. Overall, the number of trauma admissions during the COVID-19 pandemic in Australia has decreased significantly. However, there was no difference in the number of admissions secondary to self-harm injuries (due to anxiety and depression) or assault, and some trauma from domestic violence was increased.³

In Germany, a study was conducted on the effect of the COVID-19 shutdown on the number of trauma patients at an academic Level I Trauma Center in Berlin. The number of trauma patients, cases of orthopedic trauma, causes of trauma, and patterns of injury during the 35-day COVID-19 shutdown as compared to the same date and duration in 2019. Daily total cases of trauma patients and orthopedic cases of trauma during the COVID-19 shutdown were reduced compared to the previous period and there was an increase in the occurrence of some traumas such as household injuries and bicycle accidents. The increase in household injuries may be related to staying at home and increasing tensions between family members. It is noteworthy that during the COVID-19 shutdown, acute and regular substance abuse increased, which could underlie the increase in domestic violence. During the COVID-19 shutdown, the number of people cycling increased for a variety of purposes, including the observance of protocols, social distancing and the avoidance public transportation. Injuries from workplace violence also increased during the COVID-19 shutdown compared to the same period in 2019, which may be due to pandemic stress and its devastating effects. However, no changes were observed in the incidence of nightlife-related accidents, self-harm injuries, suicide attempts, assault-related injuries, and robbery-related

injuries compared to the previous period. The proportion of accidents related to motor vehicles, pedestrians, and public transport also did not differ between study periods.⁴

To our knowledge, no comparable data is available on trauma in Iran. The allocation of hospital trauma wards to COVID-19, the reduction of the capacity of trauma wards and the application of COVID-19 restrictions, suggests that the number of trauma patients during the COVID-19 pandemic in Iran has decreased. Additional research is required to confirm this hypothesis.

Overall, quarantine restrictions during the COVID-19 pandemic have led to fewer admissions of trauma patients, especially those resulting from road accidents. Trauma from domestic violence and assaults has grown, which is alarming. The number of patients in need of intervention or necessary operations in the hospital is also unchanged. So the importance of maintaining trauma service capacity and capability during the pandemic is critical and necessary.

Conflict of Interests

None.

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