

Comparative Analysis of Injury Incidence Patterns in Pediatric Patients Pre- and Post-Pandemic Lockdown: An Unprecedented Paradigm Shift

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INTRODUCTION:

The COVID-19 pandemic and subsequent lockdown measures have had profound impacts on daily life, affecting not only public health but also injury patterns globally. As part of a broader effort to understand these changing dynamics, our study examines the shift in orthopaedic and other related injuries before and after the implementation of lockdown restrictions.

METHODS:

A comprehensive analysis was conducted using the TriNetX national database, after propensity score matching 10,475,018 children were identified. Statistical comparisons were made to evaluate the incidence proportions per 100,000 among different type of injuries for pre-lockdown (2018-2019) vs. lockdown period (2020-2021) including firework and explosion injuries, accidental gunshot wounds (GSWs), fractures such as lower limb, upper limb, Ribs, Hip/Pelvis, Spine, Skull & Facial Bones. Additionally, the study looked at Sports-Related injuries. Data analysis was performed. Statistical significance was held at 0.05.

RESULTS:

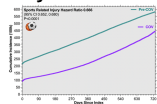
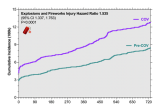
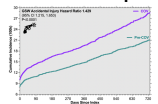
We identified 5,237,509 children mean age 5.6 +/- 4.1 for each, pre-lockdown and lockdown period. Our findings highlighted a notable shift in injury patterns during the lockdown. Accidental GSWs and explosions/ fireworks saw a significant increase, incidence proportion per 100,000 was 15.2 vs. 22.2 and 6.7 vs. 9.1 (p<0.001) respectively. The rate of rib fractures, hip/pelvis fractures, and spine injuries reduced significantly during the lockdown, with the rate per 100,000 population dropping from 86.36, 144.4, and 150.17 pre-lockdown to 54.84, 112.04, and 120.65 respectively during lockdown (all p<0.0001). Considerable decline in the incidence rate of sports-related injuries during the lockdown (269.78 per 100,000) compared to pre-lockdown levels (465.45 per 100,000; p<0.0001) was also observed.

DISCUSSION AND CONCLUSION:

The changes in injury patterns during lockdown reflect the impact of stay-at-home orders on everyday activities, pointing to the reduced opportunity for sports-related injuries, and increased home accidents.

These findings underline the need for healthcare systems to adapt in response to such significant shifts in health demands and pave the way for future pandemic preparedness planning.

ICD-10 Code	Pre-Lockdown (2018-2019)	Lockdown (2020-2021)
S00.0	15.2	22.2
S00.1	6.7	9.1
S00.2	15.2	22.2
S00.3	6.7	9.1
S00.4	15.2	22.2
S00.5	6.7	9.1
S00.6	15.2	22.2
S00.7	6.7	9.1
S00.8	15.2	22.2
S00.9	6.7	9.1



ICD-10 Code	Pre-Lockdown (2018-2019)	Lockdown (2020-2021)
S10.0	86.36	54.84
S10.1	144.4	112.04
S10.2	150.17	120.65
S10.3	86.36	54.84
S10.4	144.4	112.04
S10.5	150.17	120.65
S10.6	86.36	54.84
S10.7	144.4	112.04
S10.8	150.17	120.65
S10.9	86.36	54.84

ICD-10 Code	Pre-Lockdown (2018-2019)	Lockdown (2020-2021)
S20.0	465.45	269.78
S20.1	465.45	269.78
S20.2	465.45	269.78
S20.3	465.45	269.78
S20.4	465.45	269.78
S20.5	465.45	269.78
S20.6	465.45	269.78
S20.7	465.45	269.78
S20.8	465.45	269.78
S20.9	465.45	269.78

