

Effect of COVID-19 Lockdown on the “Deliverymen Injuries”

Stamatios Papadakis, A.*, Georgios Gourtzelidis, Dimitrios Pallis, Konstantinos Tsivelekas, Evangelos Triantafyllou & Charikleia Komari

B' Department of Orthopaedics, KAT General Hospital of Attica, Greece

***Correspondence to:** Dr. Stamatios Papadakis, A., B' Department of Orthopaedics, KAT General Hospital of Attica, Greece.

Copyright

© 2021 Dr. Stamatios Papadakis, A., *et al.* This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Received: 03 September 2021

Published: 24 September 2021

Keywords: *COVID-19 Pandemic; Lockdown; Orthopaedic Trauma; Deliverymen Injuries*

Abstract

COVID-19 emerged as a pandemic in 2020 leading world-wide governments to enforce national lockdowns. Orthopaedic trauma care was not left unaffected. One such special category of trauma patients was deliverymen. This is a retrospective study concerning a total of 17 male patients with mean age of 30.8 years (18 - 45 years) who sustained injuries while on service. We compared data from two periods: Period A concerned a time span between March 23rd and May 5th in 2019 and period B included the same timeframe in 2020 during lockdown. Nine patients were treated during the first non-COVID period, while 8 were admitted in the hospital during lockdown. Six of them were treated operatively, while the rest underwent a conservative treatment. The number of surgical cases remained the same between the two periods. COVID-19 pandemic resulted in the enforcement of national lockdowns, which reduced dramatically the number of vehicles moving on the roads. On the other hand, delivering food and goods also rose during that period, leading more motorcyclists to speed on the empty roads, thus maintaining the same rate of injuries in this particular working group as in the pre-lockdown period. The lack of awareness among these workers about the much needed- though expensive-protective gear contributes in the continuation of the deliverymen injuries.

Introduction

Humanity has been stricken by epidemics many times in the past. The most recent epidemic is COVID-19, which was eventually documented as a pandemic [1]. In the early months of 2020, the first COVID-19 case outside the borders of China was recorded [1]. WHO published a series of recommendations and instructions to avoid spreading the virus [2]. The rapid increase of people testing positive for the virus forced many countries, including Greece, to take measures that would prevent overcrowding. The first strict national lockdown was announced on 23rd March 2020 which was gradually lifted from 4th May 2020. The total period of lockdown revealed a clear change in the distribution of orthopaedic trauma treated by the healthcare professionals [3]. A notable exception was the deliverymen. The term “Deliverymen disease” includes the variety of injuries sustained by motorcyclists who are working in delivery services. The term was firstly presented in the European Congress of Trauma and Emergency Medicine, Oslo Norway 2020 [4].

Materials and Methods

This is a retrospective study comparing data from two periods of the same duration in a Level-1 Trauma centre, namely Period A (between March 25th and May 5th 2019) and Period B - the lockdown period- (March 25th to May 5th 2020). The study included 17 males with a mean age of 30.8 years (18 - 45 years), who were working as delivery distributors and suffered injuries during their service time. Cases treated either surgically or conservatively, were included in this study. The indications for surgical treatment were not affected by the pandemic in our centre. We also recorded and evaluated the use of adequate personal protective equipment of delivery men.

Results

During Period A deliverymen disease - associated admissions were 9, while in Period B there were 8. The admissions remained by and large the same during the lockdown. All of the examined patients were males. The mean age was 27,2 years old for Period A and 31,1 years old for Period B. The surgical treatment involved 2 tibial plateau fractures treated with external fixation, and four cases of open reduction-internal fixation of a femoral, forearm, tibial plateau and ankle fracture respectively.

There were 2 cases involving a shoulder injury during the Period A and one during Period B. There seems to be a decrease in the overall rate of the upper extremities injuries during the lockdown period (four cases in 2019, two in 2020). On the contrary, the lower extremities injuries had the same rate between the two periods. A total of 3 tibial plateau fractures were treated in both periods (Table 1 and 2). Only one fracture involving the malleoli was treated during the second period of the study. There was a cervical spine injury during the lockdown injury without neurological or bony compromise that was treated conservatively (Table 2). Protective gear of any sort, such as helmet, gloves etc. was not used in its entirety and not always, as shown in Table 3.

Table 1: Showing the cases that were treated by our department during the non-lockdown period in 2019

Age	Type of Injury	Treatment
34	Tibia Plateau Fracture	Ex-Fix
45	Forearm Fracture	ORIF
26	Femur Fracture	ORIF
39	Shoulder Injury	Conservative
29	Ankle Sprain	Conservative
25	Wrist Sprain	Conservative
28	Shoulder Injury	Conservative
31	Ankle Sprain	Conservative
18	Knee Injury	Conservative

Table 2: Showing the cases that were treated by our department during the lockdown period in 2020

Age	Type of Injury	Treatment
40	Tibia Plateau Fracture	Ex-Fix
31	Bimalleolar fracture	ORIF
42	Tibia Plateau Fracture	ORIF
20	Cervical Spine Injury	Conservative
34	Knee Injury	Conservative
21	Shoulder Injury	Conservative
24	Knee Injury	Conservative
37	Wrist Fracture	Conservative

Table 3: Showing the protective gear used by the deliverymen included in this study

Protective Gear	Absolute Number	Percentage
Helmet	11/total cases	65%
Jacket	6	35%
Gloves	12	71%
Boots	0	0%

Discussion

The spread of the COVID-19 pandemic resulted in the need to enforce measures to prevent transmission. These measures had an impact on orthopaedic cases that required admission to hospital and surgical treatment, as shown by previous studies [3,5]. This did not apply for delivery workers who continued

delivering food and goods, in growing numbers, and most of the times without the proper protective gear as this study revealed. Moreover, in an under-review study by our department we found a decrease rate of 41% in orthopaedic trauma cases. (Pandemic effect on orthopaedic trauma at a Level 1 trauma hospital, Papadakis *et al.* - Hippokratia 2021, under review). The number of trauma cases that required surgical treatment remained the same. Banning the majority of athletic activities and constricting peoples' transportations lowered the number of orthopaedic trauma cases, whether motor vehicle collision or sports related injuries [3,5] However, delivery of food and goods saw a dramatic rise [6]. That meant a raise in the number of motorcyclists delivering food and goods in their area at any given time during the lockdown. The great plethora of orders that needed to be delivered within a reasonable timeframe meant that these workers were urged to accelerate in the empty roads, with devastating sometimes results. In our opinion, this was the main reason why there was no apparent decrease in this particular type of occupational accidents during the quarantine period, in combination with the fact that the much-needed protective gear was not used - as shown in Table 3.

Deliverymen disease, as described in a previous study [4], is a separate clinical entity - namely the entirety of injuries sustained by delivery workers during their working hours as a result of activities associated with their duties.

The lack of an adequate personal protective equipment due to their low income and financial status in combination with the absence of driving professional education among workers in this category of delivery employees results in lower extremity injuries with the majority requiring hospitalization and surgery. Further investigation is needed, as well as constant training and setting right criteria for the pursuit of such employment [7].

Conclusions

COVID-19 pandemic resulted in the enforcement of national lockdowns. Delivering food and goods rose dramatically, leading more motorcyclists to speed on the empty roads. This, in combination with the lack of awareness among delivery workers about the much needed- though expensive-protective gear, contributes in the continuation of the deliverymen injuries.

Bibliography

1. WHO (2020). WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020.
2. WHO (2019). Health workforce policy and management in the context of the COVID-19 pandemic response.
3. MacDonald, D. R. W., Neilly, D. W., Davies, P. S. E., Crome, C. R., Jamal, B., Gill, S. L., *et al.* (2020). Effects of the COVID-19 lockdown on orthopaedic trauma: a multicentre study across Scotland. *Bone Jt Open.*, 1(9), 541-548.

4. Kallias, A., Pallis, D., Ambadiotaki, M. M., Tsivelekas, K., Gourtzelidis, G., Trygonis, N., *et al.* (2020). Delivery Disease: a new prospective study on occupational injuries of delivery employees. *European Congress of Trauma and Emergency Surgery*, Oslo, Norway.
5. Kuitunen, I., Ponkilainen, V. T., Launonen, A. P., Reito, A., Hevonkorpi, T. P., Paloneva, J., *et al.* (2020). The effect of national lockdown due to COVID-19 on emergency department visits. *Scand J Trauma Resusc Emerg Med.*, 28(114).
6. Shveda, K. (2021). How COVID-19 is changing food shopping.
7. Wong, J. S. H. & Cheung, K. M. C. (2020). Impact of COVID-19 on orthopaedic and trauma service: An epidemiological study. *J Bone Joint Surg Am.*, 102(14), e80.