



Original Article

Use of social media while driving from an orthopedic resident's perspective

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ABSTRACT

Purpose: To investigate the orthopedic injuries sustained while driving and using social media on cellular phones from an orthopedic resident's perspective.

Methods: A total of 118 patients who presented with a history of road traffic accident secondary to social media usage and suffered from fractures were included in this cross-sectional study. These patients were reported from October 2018 to April 2019. We collected the data including the type of collision, type of social media usage during driving, location of injury, wearing of safety equipment's such as helmet and seat belt during driving.

Results: The mean age of patients was (34.86 ± 12.73) (range 15–71) years. The common types of accident on the basis of collision of vehicles were: car versus motorbike 45 (38.1%), motorbike versus motorbike 28 (23.7%), and motorbike versus pedestrian 22 (18.6%). Most of the accidents (61, 51.7%) occurred due to mistake of motor-bikers. Out of them, 44 (37.3%) occurred on traffic signals, followed by 29 (24.6%) while driving on main roads. The common timing of accident was normal hours with frequency of 44 (37.3%), followed by 39 (33.1%) at late night. According to fracture type, closed injuries were 98 (83.1%) and open fractures were 20 (16.9%). The most common fracture was clavicular fracture (21, 22.5%) followed by soft tissue injury in 19 (16.1%) patients. The most common social media application usage during driving was Facebook 43 (36.4%), followed by Whatsapp 24 (20.3%), Google 19 (16.1%), and Instagram 15 (12.7%).

Conclusion: This study provides evidence that social media usage while driving put the drivers and other road users' lives at high risk. The most common social media addiction while driving is Facebook and Whatsapp. So there is a need to make strict rules and penalties for using cell phone during driving so as to save the lives of drivers and other people using road.

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Introduction

As technology has progressed, so have means of communication. In the present age mobile phones have become an amalgamation of communication and technology, making it a “smart phone” which has an internet connection, satellite navigation, phone camera, video camera, a mini computer and an entertainment system having online stores with more than 1 million applications available for download.¹ All this data and information in the palm our hand creates a potentially powerful source of distraction especially while driving on the roads.^{2,3} In 2015, the

World Health Organization (WHO) estimated that 1.2 million people die of car crash worldwide annually.⁴

Distracted driving is a known cause of disastrous road traffic accidents (RTAs). With the increased advances in smart phone technology and the ever so increased necessity of staying up to date in the virtual world, the incidence of RTAs has increased. This is attributed to the fact that driving and operating smart phone both require cognitive and physical attention and doing them simultaneously increases the cognitive task and decreases the road safety.⁵ In 2014, British Medical Journal published an article which concluded that car crashes were more common in distracted drivers than among the non-distracted drivers.⁶ This fact was backed up by the second strategic highway research program naturalistic study (SHRP 2 DNS), which is the largest naturalistic study in the world, which also states that mobile phone interactions increase the risk of car crash with an odds ratio of 6.1.⁷

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Various studies have been conducted on driving and alcohol, driving and using mobile phones or driving and texting, reporting the number of deaths in these drivers or studies that have investigated into various intricacies of mobile phones and driving in a simulated environment. None of the studies have yet investigated the pattern of musculoskeletal trauma while using social media during driving.

The purpose of this study is to investigate the orthopedic injuries sustained while driving and using social media on cellular phones from an orthopedic resident's perspective. We have seen and reported an increase in the number and severity of trauma with a changing pattern of injury in Pakistan which requires further investigation.⁸ This study will help us identify contributing factors.

Methods

This cross-sectional study was conducted at the Accident and Emergency of Jinnah Postgraduate Medical Center, Karachi, Pakistan. We included 118 patients who presented with a history of RTA secondary to social media usage on cell phone and sustained fractures. These patients were reported from October 2018 to April 2019. Patients with minor injuries, including superficial injuries and soft tissue injuries were excluded. Written consent was taken from each patient before collecting their data for this study. Approval from hospital ethical review board committee was also taken.

We collected basic demographic data such as age, gender, level of education and occupation alongside the data of type of collision, location of the collision, time of the collision, type of social media usage during driving, location of injury, wearing of safety equipments such as helmet and seat belt during driving.

Results

The mean age of patients was (34.86 ± 12.73) (range 15–71) years with male predominance. There were 92 (78%) male and only 26 (22%) female patients. Regarding educational level, many of the patients, (52, 44.06%) were graduate or higher education, and 35 (29.66%) were having higher secondary school education. Regarding occupation, there were 45 (38.1%) patients who were self-employed, 30 (25.4%) business man and 13 (11.0%) were stock exchange brokers, while 30 (25.42%) were university students.

Distribution of type of accident on the basis of collision of vehicles was: car versus motorbike 45 (38.1%), motorbike versus motorbike 28 (23.7%), motorbike versus pedestrian 22 (18.6%), car versus pedestrian 10 (8.5%) and any motor vehicle versus footpath 13 (11.0%).

The most common site for accidents were traffic signals (44, 37.3%), followed by driving on main roads (29, 24.6%). The common timing of accident was normal timing hours with frequency of 44 (37.3%), followed by 39 (33.1%) at late night and 25 (21.2%) in evening rush hour. Most of the accident occurred due to mistake of motor-bikers (61, 51.7%), followed by car drivers (53, 44.9%). According to fracture type, closed injuries were 98 (83.1%) and open fractures were 20 (16.9%). The most common fracture was clavicular fracture (21, 22.5%). Soft tissue injury was involved in 19 (16.1%) patients (Table 1).

On safety precautions, 103 (87.3%) were not wearing helmets or seat belts. Among them, 7 (5.9%) were diagnosed with traumatic brain injury and 1 (1.4%) fatality secondary to traumatic brain injury was noted in this study. On counselling of patients regarding the benefits of helmet and seat belt, 80.43% of the victims agreed that helmet is compulsory and 95.65% acknowledged the hazards of not wearing helmets. Also, 93.4% agreed that seat belt is compulsory.

On the type of social media usage, the four most common applications were Facebook (43, 36.4%), followed by Whatsapp (24,

Table 1
Accident related data.

Characteristics	n (%)
Location of accident	
Down town	21 (17.8)
Traffic signal	44 (37.3)
Main road	29 (24.6)
Zebra crossing	20 (16.9)
Not on busy road	4 (3.4)
Timing of accident	
Early morning	4 (3.4)
Late night	39 (33.1)
Normal timing	44 (37.3)
Evening rush hour	25 (21.2)
Morning rush hour	6 (5.1)
Who was culprit	
Motor-bikers	61 (51.7)
Car drivers	53 (44.9)
Pedestrians	4 (3.4)
Location of fracture	
Clavicle	21 (17.8)
Soft tissue injury	19 (16.1)
Tibia fibula	16 (13.6)
Femur	8 (6.8)
Radius ulna	7 (5.9)
Metacarpals	6 (5.1)
Knee dislocation	5 (4.2)
Ankle	5 (4.2)
Metatarsal	5 (4.2)
Phalanges	5 (4.2)
Acetabulum	4 (3.4)
Wrist	4 (3.4)
Neck of femur	2 (1.7)
Intertrochanteric	2 (1.7)
Radius	2 (1.7)
Distal femur	1 (0.8)
Proximal tibia	1 (0.8)
Talus	1 (0.8)
Hip dislocation	1 (0.8)
Distal radius	1 (0.8)
Elbow	1 (0.8)
Scaphoid	1 (0.8)
Total	118 (100)

20.3%), Google (19, 16.1%), Instagram (15, 12.7%), Tiktok (8, 6.8%), Snapchat (7, 5.9%), and others (2, 1.7%).

Discussion

As technology continues to advance, drivers are faced with more potential distractions when they get behind the wheel of a car. Use of mobile phone and talking during driving is prohibited by road traffic authorities because it diverts driver attention and reduce concentration on road thereby puts its own life and others people life at high risk of accidents. With the recent popularity of cell phones with internet capabilities, users are also choosing to look at or contribute to social media sites like Facebook or Twitter while driving.

In our study, patients had a mean age of (34 ± 12.7) years, which is consistent with figures reported by Shamim et al.⁹ In their data 73% of victims of road traffic injuries aged between 15 and 44 years.

As opposed to answering a phone call, the use of social media engages visual and tactile sense for reading and typing, respectively. This distracts the driver and takes their eyes off the road and often hand(s) off the wheel. Data during simulated driving in younger drivers shows a six-fold increase in crashes when texting, which caused a 0.5 s sight off the road show resulting in 50% more swerving and 140% increase in missed lane changes.^{10,11}

The most common mechanism in our study was car versus motorcycle. The higher rates of car versus motor cycle can be attributed the higher number of motorcycles in Karachi as compared to cars. In our six-month data for a trauma registry, the

highest number of injuries were attributed to motorcycle crashes (22%).⁸ Given the smaller size of the motorcycle occupying a smaller area in the visual field, distracted drivers may have poorer reaction times as compared to motorcars.

Clavicular fractures (17.8%) are reported to be the most commonly reported injuries in our data. When compared to our previous data recorded in the same hospital, the most common injury was femur fractures (10%).⁸ This can be explained by the lower speed of vehicles involved in distracted driving. Data from the United States reports that drivers actively using a cell phone have a higher chance of driving slower, mimicking congested traffic.¹² Younger drivers who are distracted were seen more likely to be involved in rear-end collisions.¹³

The high rate of poor helmet compliance seen in our study is consistent with previous studies from the region.^{8,9}

There are 152 million cell phone subscribers with a telephone density of 73.23% in Pakistan. There are 60 million users capable of running social media applications on these phones (29%).¹⁴ Since there is a lack of published data on the most popular social media website or application in Pakistan, we reviewed several digital websites which claim Facebook to be overwhelmingly popular among the users in Pakistan compared to other applications.¹⁵

Road users who use social media on their cell phones while driving are a danger to other motorists and even pedestrians because they are unable to maintain concentration on the road. Studies have shown this relative risk is similar to the hazard associated with driving with a blood alcohol level at the legal limit.^{16,17}

In summary, in last few years, social media has become an addiction for millions of people. There are nearly about 600 million people who used Facebook and twitter, and more than 50% of them use these social media platforms through mobile apps. Opening of news feed of these apps during driving can distract driving attention from (1) traffic signals or stop signs; (2) jumping curbs or moving into other lanes without noticing; (3) failing to stop in time and rear-ending vehicles because they are not looking at the road.

This study provides evidence that social media usage while driving put the drivers and others road user's life at high risk. Most common social media addiction while driving is Facebook and Whatsapp.

There is a need to make strict rules and penalties for using cell phone during driving to save the lives of drivers and other people using road. Novel and safe technology in the form of hands-free as well as early warning systems can help reduce distraction in drivers.

The major limitation of present study is that we did not compare the data of distracted drivers with those of normal drivers. Moreover, this study took place at a single center. Patients who present to other hospitals after RTAs while using social media may differ in their injury patterns.

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Nil.

Ethical Statement

This study was approved by the ethical committee of our institution.

Declaration of Competing Interest

The authors declare that they have no competing interests.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.cjtee.2019.09.004>.

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