

USE OF MOBILE PHONES WHILE DRIVING AND RESULTING FACIAL INJURIES

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ABSTRACT

The purpose of this study was to give an overview of drivers use of mobile phones while driving and its role in motor vehicle crashes and subsequent facial injuries.

200 patients who were either drivers or passengers involved in facial injuries as a result of road traffic crashes between January 2008 and November 2008 were included in this study. They were seen in the Department of Oral and Maxillofacial Surgery at Khyber College of Dentistry, Khyber Pakhtunkhwa, Pakistan. All relevant informations were collected on a specially designed Proforma and analysed using SPSS version 17.

Male outnumbered female with a male to female ratio of 6:1. Passengers were injured more frequently (60%) as compared to the drivers (40%).

32 drivers (40%) out of 80 had used mobile phone at the time of accident. Among those drivers (n=32) who had used mobile phone at the time of accident, the 3rd decade was the most commonly involved age group followed by 2nd decade. Mandible was the most common bone involved in 46.88% of the cases followed by Zygomatic complex fractures (21.88%).

This study has highlighted the problem of road traffic injuries among drivers and passengers as a serious public health problem. Mobile phone users commit more errors and lapses than non-mobile phone users. It seems that cellular mobile phone bring extra workload to memory and share attention sources, which causes accidents by distracting the attention of drivers.

Key words: Mobile phone use, Road traffic accidents, Maxillofacial trauma

INTRODUCTION

Cell phone use is a comparatively recent phenomenon that also affects automobile safety. At present, with 93 million cellular subscribers Pakistan stands fifth among mobile users in Asia, the first being China followed by India.¹ About 50% of Americans use a cell phone, and about 85% of these use it while driving. In addition to taking their eyes off the road while dialling, drivers can become so engrossed in conversation that their ability to concentrate on driving is severely impaired.²

Drivers have to share the road space while driving a vehicle. Collaboration is essential when two drivers

compete for the same part of the road. Disagreements may lead to crashes and accidents, whereas successful coordination provides a specific order in which the drivers can move forward.³

There is increasing evidence that the use of a handheld mobile telephone while driving a motor vehicle increases the risk of fatality and the risk of road crashes. The risk of collision and subsequent facial injuries increase by four fold when using mobile phone while driving when compared to driving without using a phone.⁴ Although sex predilection or availability of a hands-free device does not influence the increased likelihood of a crash.⁴

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Studies have found that phone use impairs performance on simulated or instrumented driving tasks, using such measures as reaction time, variability of lane position and speed, following distance, and situational awareness. Impairments have resulted from cognitive distractions whether drivers are using either hands-free or hand held phones. Studies also have reported effects of physical distraction from handling phones.^{5,6,7} This impairment has been found to be at about the same level as someone driving with 0.08 blood alcohol level.⁸

METHODOLOGY

Two hundred patients who were either drivers or passengers involved in facial injuries as a result of road traffic accidents between January 2008 and November 2008 were included in this study. They were treated in the Department of Oral and Maxillofacial Surgery at Khyber College of Dentistry, Khyber Pakhtunkhwa, Pakistan. All relevant information including age, sex, role in the accident (driver/passenger) and information regarding the use of mobile phone or otherwise by the driver were collected on a specially designed Proforma. Pattern of maxillofacial injuries were also determined by history, clinical examination and necessary radiographs. Data were analysed using SPSS version 17.

All patients with facial injuries resulting from road traffic accident at age 15 years or above irrespective of gender were included in this study.

Following patients were excluded from this study: Patients with associated severe head injuries and history of unconsciousness, motorcyclists, cyclists and patients below 15 year of age.

RESULTS

Out of 200 participants, male outnumbered female with a male to female ratio of 6:1. Males constituted 85.5% (n=171) while females 14.5% (n=29). The gender distribution is given in Fig 1. In this study passengers were injured more frequently (60%) as compared to the drivers (40%). Fig 2.

In response to a question asked that whether the driver was using mobile phone at the time of accident, 32 drivers (40%) out of 80 were positive for mobile phone use. In 59.37% (n= 19) of the cases the source of information regarding the mobile phone use by the driver at the time of accident were passengers. The remaining 40.63% (n=13) were reported by drivers themselves, Fig 3. Among those drivers (n=32) who used mobile phone at the time of accident, the 3rd decade was the most commonly involved age group followed by 2nd decade. Overall age ranged from 16 to 41 years. Details are given in Table 1.

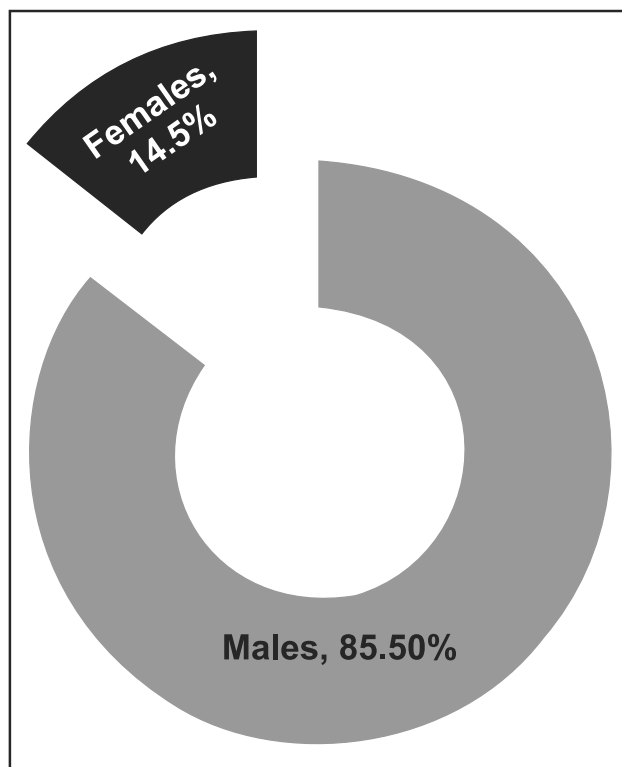


Fig 1: Gender Distribution of patients (n=200)

TABLE 1: AGE DISTRIBUTION AMONG DRIVERS WHO USED MOBILE PHONE (n=32)

Age (in Years)	n	%
15 – 20	9	28.12%
21 – 30	17	53.12%
31 – 40	4	12.5%
41 – 50	2	6.25%
Total	32	100

TABLE 2: PATTERN OF FACIAL INJURIES

Type of injury (Fracture)	n	%
Mandible #	15	46.88%
ZMC #	7	21.88%
Maxilla #	5	15.62%
Multiple #	4	12.5%
Soft tissues	1	3.12%
Total	32	100

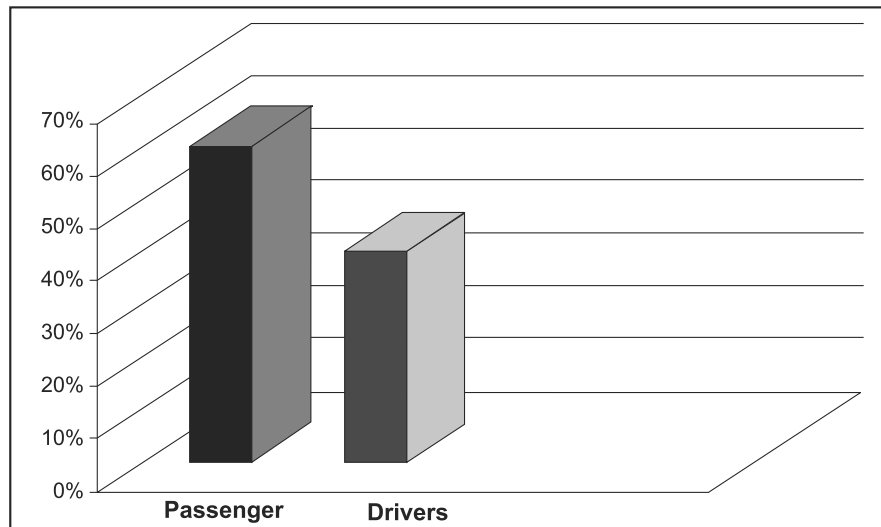


Fig 2: Role of patients in accidents (n=200)

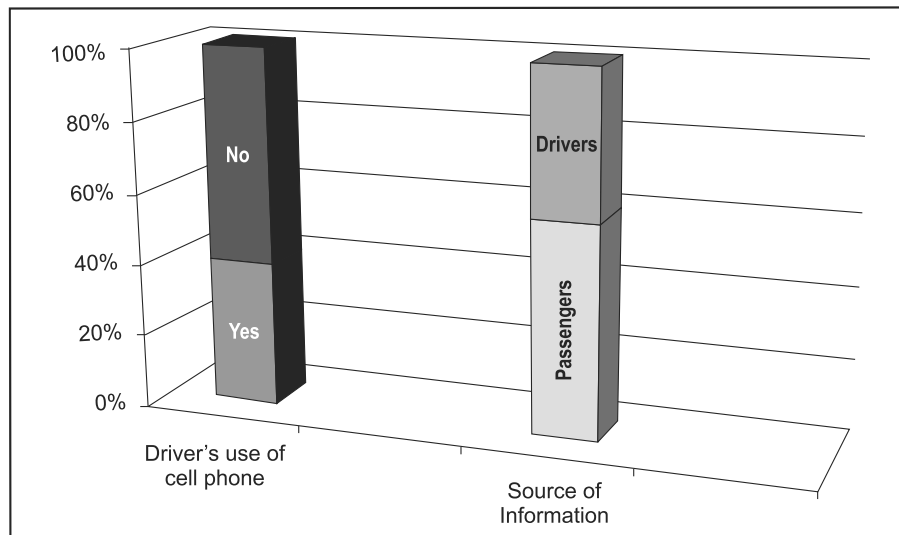


Fig 3: Mobile phone use by the drivers

Mandible was the most common bone involved (46.88%) followed by Zygomatic complex fractures (21.88%). Soft tissue injuries remained least frequent. Details of facial injury pattern are given in Table 2.

DISCUSSION

The large variations in assessment and measurement of variables as well as repetition of data employed by previous investigators worldwide made a systemic review difficult if not impossible. However, analysis of the previous studies showed noticeable trends and characteristics.

Unlike Roudsari⁹ and Smith¹⁰, majority (60%) of the victims in this study were vehicle occupants as compared to the drivers or private car riders. The reason

for this different finding, in developing country like Pakistan is that the poor are disproportionately affected in road crashes, because most of the victims being passenger of public transport.¹¹ The design of passenger vehicle is such that the man in a vehicle is surrounded by rigid tubes, angles, knobs, heavy door posts, sharp instruments, and heavy metals of small radius of curvature which impact the face and head causing severe injuries.¹² Wood¹³ has the same statistics showing that passengers are not well protected in their vehicles and are more prone to injuries in road traffic accidents.

According to the data provided by the victims (both the drivers and passengers) 40% (n=32) of the drivers were using mobile phone at the time of accident. Most of the studies^{3,4,8,14} done in developed countries show that 7-12% of the drivers had used mobile phone at the

time of accident which is in contrast to greatest percentage in the present study reflecting serious gaps in traffic legislations in this country.

Studies reporting on road traffic collisions and their characteristics indicate that young male drivers and drivers who use mobile phone while driving have a higher risk of being involved in traffic crashes because adolescents are identified as a particularly high-risk cellular phone users throughout the world.^{14,15,16} The data in present study show a worryingly high level (81.24%) of the young drivers at or below the age of 30 years involved in RTAs with 28% below the age of 20. This shows lack of enforcement of comprehensive and clear legislation with appropriate penalties, lack of restrictions on driver eligibility or on the maintenance of privately operated public transport in this part of the region. Physical and developmental immaturity among youngsters, inexperience and youth-related lifestyles further increase the risk of young road users particularly males to road traffic accidents.

The pattern of maxillofacial injuries in this study is in accordance with the studies elsewhere^{17,18,19,20}, showing that mobile phone use is a contributory factor in RTA and subsequent maxillofacial injuries but it has no direct influence on the severity and pattern of injuries.

CONCLUSION

This document to the best of our information is the first of its kind in this country, has highlighted the problem of road traffic injuries among drivers and passengers as a serious public health problem. Mobile phone users commit more errors and lapses than non-mobile phone users. It seems that cellular mobile phone may bring extra workload to memory and share attention sources, which cause collisions by distracting drivers and render them more prone to collision.

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