

Epidemiologic Characteristic of Road Traffic Accidents Mortality in Mashhad, Iran

Davood Soroosh,¹ Sepinush Sajjadi,¹ Morteza Talebi Deloei,^{2*} Azade Gharaii,² and Hami Ashraf³

¹Mashhad University of Medical Sciences, Mashhad, IR Iran

²Department of Emergency Medicine, Mashhad University of Medical Sciences, Mashhad, IR Iran

³Research and Education Department, Razavi Hospital, Mashhad, IR Iran

* Corresponding author: Morteza Talebi Deloei, Department of Emergency Medicine, Mashhad University of Medical Sciences, Mashhad, IR Iran. Tel: +98-9153164058, Fax: +98-5118442737, E-mail: talebidm@mums.ac.ir

Received 2014 May 02; Revised 2015 April 06; Accepted 2015 July 06.

Keywords: Road, Traffic, Death, Epidemiologic, Characteristic, Car, Occupants

Dear Editor,

We read an interesting article entitled "Trauma mortality: using injury severity score (ISS) for survival prediction in east of Iran", by Ehsaei et al. published in Razavi international journal of medicine in February 2014 (1).

About 70 deaths per day in Iran occur because of road traffic injuries (2). Traffic injury rates have been rapidly risen out of control because of a variety of possible reasons such as increasing number of non-standard cars and motorcycles, low gas price, decreasing ratio of travels by public transportation compared to private vehicles, and problems with safety design (3).

In a cross sectional investigation carried out from March 2012 to March 2013, we tried to determine the epidemiologic characteristic of road traffic accidents mortality in Mashhad, the second populated city in Iran. So these data could add helpful information to your manuscript for better planning to reduce road traffic death in similar cities in the world.

Data including age, gender, nationality, place of death and type of vehicle related to road traffic accidents mortality were gathered from cemetery and coroner organization records. Cases that had incomplete data were excluded.

From total number of 16000 deaths which were recorded, 850 deaths were due to road traffic accidents. 191 cases (22.47%) were female and 659 cases (77.53%) were male. 798 cases were Iranian and 52 were Afghan.

42% of deaths were car occupants, 28% motorcyclists, 25% pedestrians, 4% cyclists and 1% air crash. The 21 - 30-year-old group was the most affected group with 24.1% of deaths.

Among the 850 deaths due to road traffic accidents, just 237 people (27.8%) died after hospital admission and the rest (613 people) died before reaching hospital.

Death pattern in Mashhad is similar to United States'

in 2012. Most deaths are seen among vehicle occupants. Maybe it is the result of less driving experience in this age group (4).

In a report from United States, road traffic crash fatalities are at the lowest level since 1950. The reduction in crash injury burden is attributed to several factors: public education and prevention programs, traffic safety policies and enforcement, improvements in vehicle design, and pre-hospital services coupled with emergency and acute trauma care (5).

In 2013, US department of transportation published an overview on 2012 motor vehicle crashes. Of total 33561 deaths in traffic crashes, 21667 (65%) were passenger vehicle, 4957 (14.8%) motorcyclists, 4743 (14.1%) pedestrians, and 726 (2.1%) pedal cyclists (6).

The overall global road traffic fatality rate is 18 per 100,000 population. However, middle-income countries have the highest annual road traffic fatality rates, 20.1 per 100,000. Half of the world's road traffic deaths occur among motorcyclists (23%), pedestrians (22%) and cyclists (5%), 31% of deaths among car occupants and the remaining 19% among unspecified road users (4).

Iran is classified as a middle-income country with 73,973,628 population in 2010. The death recorded due to road traffic death was 34.1 per 100000. The pattern of traffic deaths were; 4-wheel drivers 22%, 4-wheel passengers 26%, 2-wheel motorized riders 23%, pedestrians 28% and other 1% (4).

During a 6-month study period in Pakistan, 438 major incidents were responded by emergency medical system (EMS). 48.6% of these were related to road traffic crashes. Of the total 351 deaths at scene, 46.2% (162) were caused by road traffic crashes (7). In one study in Shiraz, Iran, the most common cause of trauma was road traffic accidents. Around 36.2% of patients received definitive medical treat-

ment at the scene of the accident (8).

More heavy traffic rules or more training in driving skill could prevent such deaths. According to WHO, deaths due to traffic injuries decreased in Iran in recent years (4). It means that strategies are useful but more consideration on young men should be taken.

References

1. Ehsaei MR, Sarreshtedar A, Ashraf H, Ghayoor Karimiani E. Trauma Mortality: Using Injury Severity Score (ISS) for Survival Prediction in East of Iran. *Razavi Int J Med*. 2014;**2**(1):ee15189. doi: [10.5812/rijm.15189](https://doi.org/10.5812/rijm.15189).
2. Soori H, Royanian M, Zali AR, Movahedinejad A. Road traffic injuries in Iran: the role of interventions implemented by traffic police. *Traffic Inj Prev*. 2009;**10**(4):375-8. doi: [10.1080/15389580902972579](https://doi.org/10.1080/15389580902972579). [PubMed: [19593716](https://pubmed.ncbi.nlm.nih.gov/19593716/)].
3. Naghavi M, Shahrzad S, Bhalla K, Jafari N, Pourmalek F, Bartels D, et al. Adverse health outcomes of road traffic injuries in Iran after rapid motorization. *Arch Iran Med*. 2009;**12**(3):284-94. [PubMed: [19400607](https://pubmed.ncbi.nlm.nih.gov/19400607/)].
4. World Health Organization . Global status report on road safety 2013 . Available from: http://www.who.int/violence_injury_prevention/road_safety_status/2013/en/.
5. Chekijian S, Paul M, Kohl VP, Walker DM, Tomassoni AJ, Cone DC, et al. The global burden of road injury: its relevance to the emergency physician. *Emerg Med Int*. 2014;**2014**:139219. doi: [10.1155/2014/139219](https://doi.org/10.1155/2014/139219). [PubMed: [24719768](https://pubmed.ncbi.nlm.nih.gov/24719768/)].
6. NHTSA . 2012 Motor Vehicle Crashes: Overview. *Natl Highway Traffic Safe Admin*. 2013(4):1-6.
7. Waseem H, Carenzo L, Razzak J, Naseer R. Epidemiology of major incidents: an EMS study from Pakistan. *Int J Emerg Med*. 2011;**4**:48. doi: [10.1186/1865-1380-4-48](https://doi.org/10.1186/1865-1380-4-48). [PubMed: [21798011](https://pubmed.ncbi.nlm.nih.gov/21798011/)].
8. Peyravi M, Ortenwal P, Djalali A, Khorram-Manesh A. An overview of shiraz emergency medical services, dispatch to treatment. *Iran Red Crescent Med J*. 2013;**15**(9):823-8. doi: [10.5812/ircmj.10982](https://doi.org/10.5812/ircmj.10982). [PubMed: [24616794](https://pubmed.ncbi.nlm.nih.gov/24616794/)].