

The Economic Burden of Road Traffic Accidents in Iran: The Time to Sound the Alarm

Over the past half century, as a result of urbanization, overpopulation, and industrialization, the rapid development of comprehensive road transportation has been resulted. Increasing motorized traffic and following that, road traffic accidents (RTAs) were one of the undisputed results of such process. Hence, the casualties and financial and psychological losses caused by RTAs have become one of the most important challenges of human societies. It is common practice to assess the burden of RTAs in terms of disability-adjusted life years (DALYs). DALYs are the sum of the years of life lost due to premature mortality and years of life lived with disability (YLDs).^[1] According to the findings from the Global Burden of Disease Study 2015 in Iran, among the ten leading causes of DALYs, road injuries were ranked the second^[2] while they accounted for third in 2003.^[3] In Iran, numerous studies have been found regarding the epidemiological profile of RTAs, but few studies have been performed in the field of financial impact of RTAs on the society; maybe the calculation of economic impact is not easy. In addition, because of underreporting and misclassifications of injuries, determination of economic loss due to RTAs is difficult. However, it seems that according to the country's current conditions and limitations arising from the unfair sanctions, paying attention to the economic dimension of traffic accidents is important. According to one Iranian study that has been used the human capital method, the financial loss of RTIs (including medical cost, lost output, and lowered quality of life) was calculated 111,342 billion IRR (US \$4.5 billion) almost equivalent to 2.18% of Iran's 2011 Gross Domestic Product (GDP).^[4] For calculating these losses, other methods have also been used. Ainy *et al.* (2014) used "willingness to pay" method for this reason and showed that costs of traffic injuries among the drivers of public vehicles constituted 1.25% of gross national income in 2013.^[5] In this regard, a study has also been conducted by the Islamic Parliament Research Center. The results of this study emphasize that the economic and social costs of RTAs in Iran amounted to 8% of GDP in 2011.^[6] Regardless of discrepancies in results, one thing is certain; Iran has one of the highest rates of road accidents in the world. In fact, RTAs are the second leading cause of death and the most common cause of injury in Iran,^[7] and this has great impact on the economy of the country that is involved in an economic war. Now, the real question is: What should be done with this problem? In recent decades, the approach to road safety has evolved from "blaming the victim" to "safe systems."^[8] The goal of a safe system as a holistic framework approach^[9] is the eradication of fatalities and severe injuries, and this influences how interventions

are considered. Proven approaches are classified into four categories: 1) vehicle characteristics including design and safety equipment like helmets and seatbelts, anti-lock braking system (ABS), electronic stability control (ESC), and airbags; 2) road user factors and related enforcement such as speed limits, seatbelts, restrictions on drinking and driving and cell phone use; 3) engineering measures that improve road design such as intersection control, safety and crash barriers, clear markings and signs; and 4) traffic management and reducing exposure including providing shorter and safer routes, better mass transit, and reducing shared paths between pedestrians and cyclists and motorized traffic. Pre-hospital emergency care and rehabilitation after injury, mental health care and legal support are important to reduce both the number of road traffic deaths and the length and severity of surviving victims' disability.^[8] By adopting such approaches that advanced countries have already used and succeeded, we can certainly succeed and reduce the fatalities and disabilities as well as financial burden of RTAs.

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REFERENCES

1. Murray CJ. Quantifying the burden of disease: The technical basis for disability-adjusted life years. *Bull World Health Organ* 1994;72:429-45.
2. Sepanlou SG, Parsaeian M, Krohn KJ, Afshin A, Farzadfar F, Roshandel G, *et al.* Disability-adjusted life-years (DALYs) for 315 diseases and injuries and healthy life expectancy (HALE) in Iran and its neighboring countries, 1990-2015: Findings from global burden of disease study 2015. *Arch Iran Med* 2017;20:403-18.
3. Naghavi M, Abolhassani F, Pourmalek F, Lakeh M, Jafari N, Vaseghi S, *et al.* The burden of disease and injury in Iran 2003. *Popul Health Metr* 2009;7:9.
4. Behnood HR, Haddadi M, Sirous S, Ainy E, Rezaei R. Medical costs and economic burden caused by road traffic injuries in Iran. *Trauma Mon* 2017;22:e35997. Doi: 10.5812/traumamon.35997.
5. Ainy E, Soori H, Ganjali M, Le H, Baghfalaki T. Estimating cost of road traffic injuries in Iran using willingness to pay (WTP) method. *PLoS One* 2014;9:e112721.
6. The Heavy Cost of Driving Accidents For The Iranian Economy; 2018. Available from: <http://www.imna.ir/news/339510>. [Last accessed on 2018 Oct 17].
7. Hamzeh B, Najafi F, Karamimatin B, Ahmadijouybari T, Salari A, Moradinazar M, *et al.* Epidemiology of traffic crash mortality in West of Iran in a 9 year period. *Chin J Traumatol* 2016;19:70-4.

8. Organization for Economic Co-Operation and Development (OECD). Road Safety Approaches and Policies; 2008. Available from: http://www.siteresources.worldbank.org/ECAEXT/Resources/258598-1258495120876/chapter_5FinalRoadSafety.pdf. [Last accessed on 2018 Oct 17].
9. World Health Organization 10 Facts on Global Road Safety. In: WHO; 2017. Available from: <http://www.who.int/features/factfiles/roadsafety/en/>. [Last accessed on 2018 Oct 17].

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