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Traffic accidents in Iran, a decade of progress but still challenges ahead

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Abstract

Iran has had incremental incidence of traffic accident mortality since introduction of mechanization about a century ago. But the newest data from Iran show decrease in the absolute number of deaths, death per 10,000 vehicles and death per 100, 000 populations. Despite its huge impact on health and economy, research in the field of traffic crashes is still scant and there are still deficiencies in problem oriented research on traffic accidents. Actual cooperation of policy makers, executive bodies and academician could build platform for intersectoral discussion of different aspects of traffic accidents and could reduce burden of traffic accidents.

Keywords: Traffic accidents, Burden of Disease, Accident Mortality.

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Iran has had incremental incidence of traffic accident mortality since introduction of mechanization about a century ago(1). The first incident of such event reported 87 years ago, on 14th November 1926. The victim was a musician who was returning home after a concert, whose carriage crashed to a rushing Ford automobile in Sepah Street in Tehran. He was thrown out of his cab, and died after 5 days due to traumatic brain injury on age 54. After his death, the Iranian prime minister ordered chief commander of police to establish the "Traffic police" for control of transportation and the first ever Iranian legislation on vehicle transportation was passed.

Since then for almost 80 years, the toll numbers of deaths caused by vehicular crashes in Iran have been on the rise reaching to the high rocketing number of 27755 on 2005.

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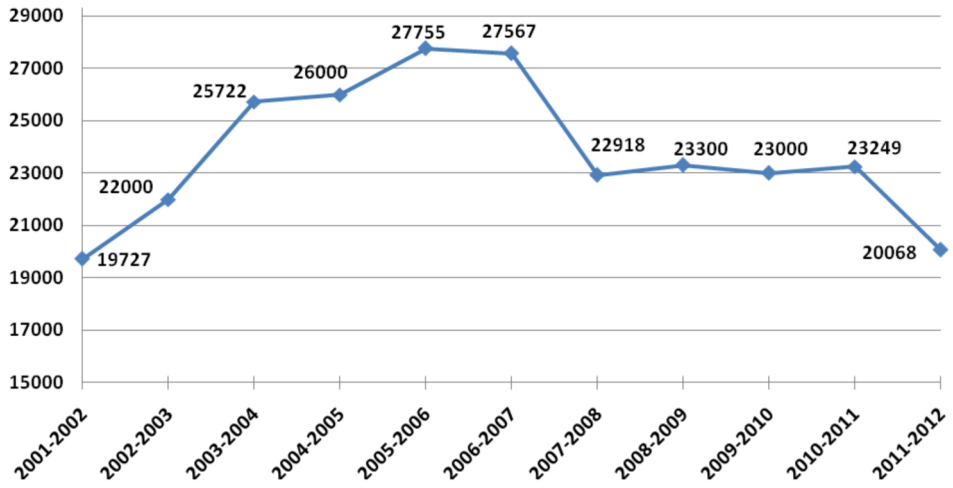


Fig. 1. Total number of traffic accident mortality (per year) in Iran

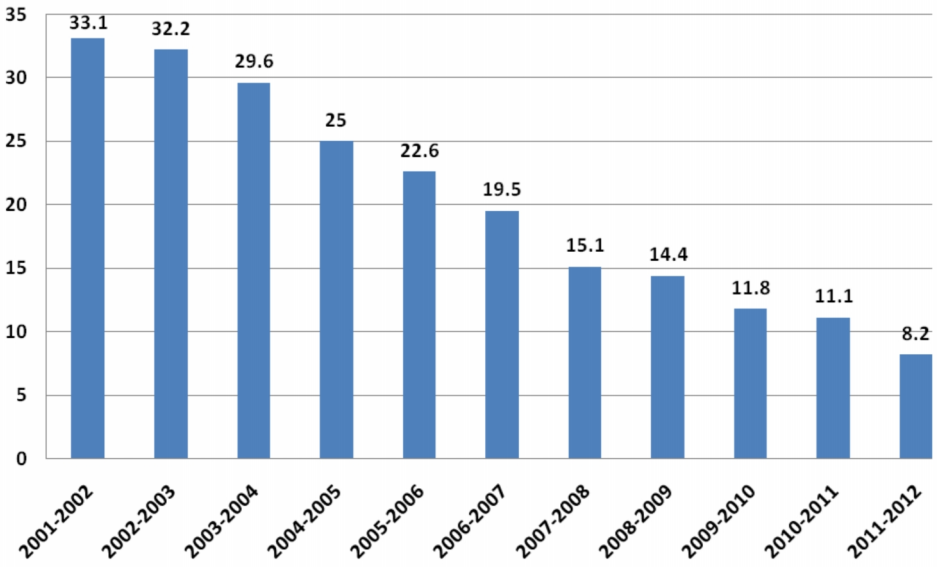


Fig. 2. Trend of traffic accident mortality during past decade in Iran (Per 10,000 vehicles)

with cooperation of police and several national and international academic institutes held the third international seminar on reducing burden of traffic accidents: challenges and strategies, on the third year of decade of action for road safety as proposed by United Nations secretary general.(2) This was a good opportunity to summarize the progress and the challenges on this important issue in Iran.

At the beginning of this decade Iran had one of the highest reported mortalities due to road traffic accidents in the world with great impact on economy. (3) (4) Estimated annual direct cost of traffic accidents according to the data presented in the seminar was 1800 trillion Rails on 2012.

During the past ten years the number of death toll had an incremental trend till 2006 (Fig. 1). The newest data shown in the seminar by the deputy minister of road and housing revealed a changing pattern from 2006 to 2012 with 27.2% decrease in the absolute number of deaths (from 27567 to 20068) , 56% in the death per 10,000 vehicles(from 19.5 to 8.2) and 31% in death per 100, 000 population (from 39.1 to 26.8) in Iran (Figs. 2,3). This was in spite

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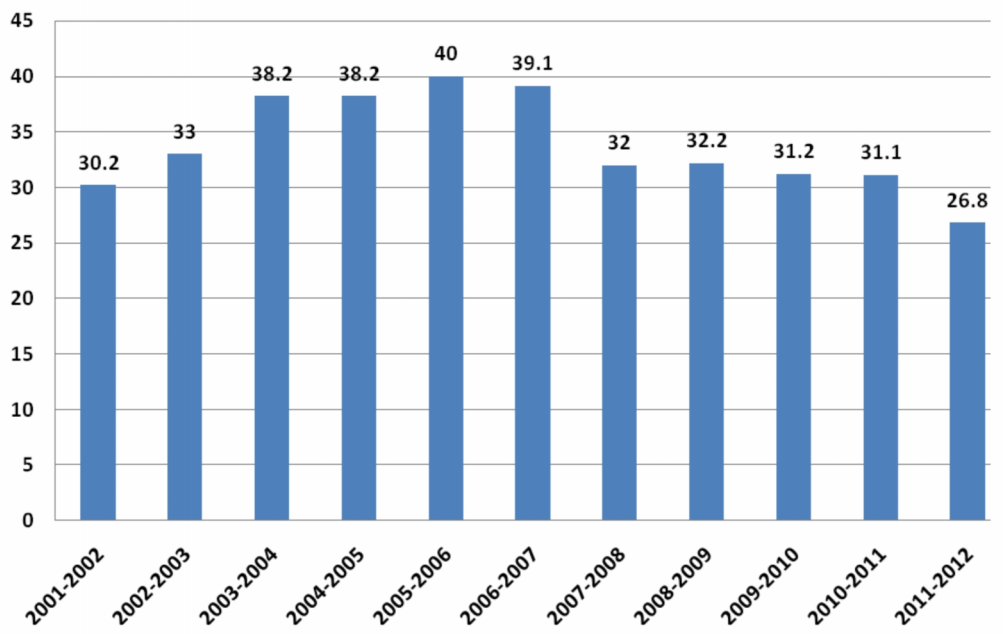


Fig. 3. Trend of traffic accident mortality during past decade in Iran (Per 100,000 populations)

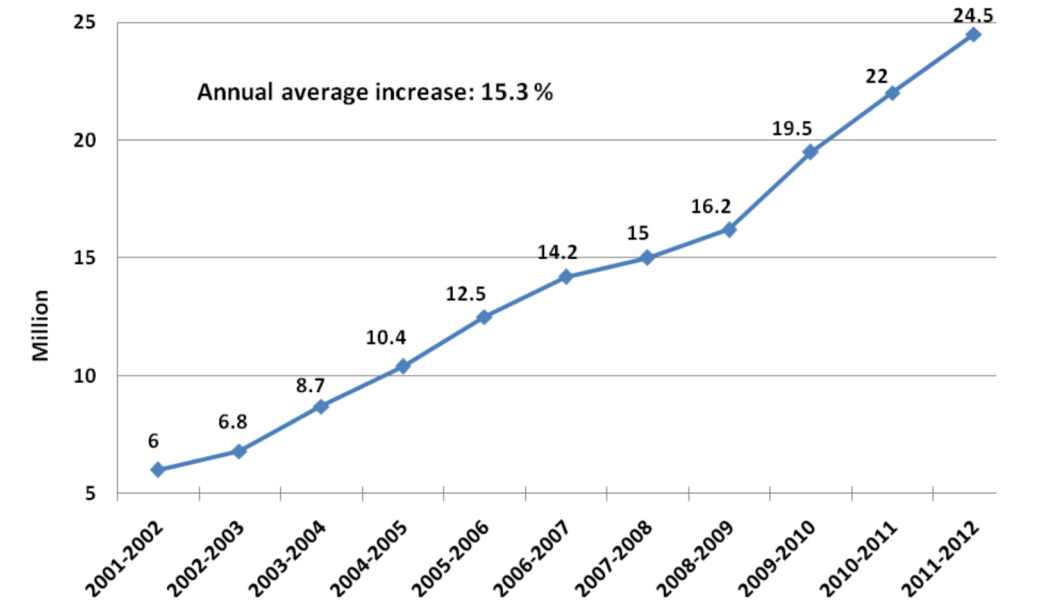


Fig. 4. Trend of total number of vehicles in past decade in Iran

of 172.5% increase in the number of vehicles in Iran form 14.2 million to 24.5 million during the same period (Fig. 4).

According to the latest national data 69% of deaths due to traffic crashes occur outside of cities or in the rural roads. Although the figure in Fars province was somehow lower at 61.4% .(5) The importance of countryside road crashes and its differences with the inner city accidents was the theme of a panel in this seminar, which organized by colleagues from Guilan university. The nonstandard transition of rural roads to other routes, inexpedient use of motorcycles in rural regions, inconspicuous presence of emergency medical services and police in these areas, inappropriate use of tractors and other agricultural vehicles were among the contributing factors for the higher incidence of severe crashes in rural regions with resultant high mortalities. The panel advised for targeted interventions to contest

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these factors. For example, the safety program for pedestrians in rural regions which mainly focused on rural schools near main roads could reduce the number of deaths by 368 in 2012 compared to 2011 as reported by a representative from ministry of road and housing. This was considered an illustration of neglected aspects of traffic accident for which effective measures are available. Other similar issues like childhood traffic victims were posponded for next meeting discussions.

Despite its huge impact on health and economy the research in the field of traffic crashes is still scant. Although the number of research articles on this issue is in rise, there are still deficiencies in problem oriented research on traffic accidents. This was emphasized by several speakers in the seminar. Some aspects including behavioral change, biomechanical of accidents and social aspects as well as disparities in trauma need more attention.

Monitoring and data collected were renowned as another needy part of planning in reducing burden of traffic accidents in this seminar. The fifth program of development of Iran have mandated the ministry of road and housing to establish data on the bases of the accidents with cooperation of other involved sectors. A primary problem is coordination between organizations involved in different stages of accidents to merge their data. In a report from HPRC new software which could merge the data from police officers, emergency services, hospital information systems especially trauma centers and forensic medicine organization was introduced. The software is based on use of artificial intelligence and capture / recaptures method in merging data used in the Shiraz for a year and could combine the data of near 87% of the events. This merging could reveal the most dangerous points and routes in Shiraz metropolian and her Siberian areas, while disclosing the major shortcomings in the patients transportation after accidents and provision of health services to them. It could also help to recognize the predictors of in and out of hospital mortalities and long term disabilities. Through analysis of these data and appropriate targeted interventions Fars province had the most rapid decline in the number of deaths from traffic crashes in the past year.

One of the major challenges in reducing burden of traffic accidents in Iran is culture of driving. Use of any technology without an appropriate culture would result in inconsistencies in behavior and abnormalities. Vehicular rage and law violation are major concerns. Professional and young people are the most commonly involved drivers according to the research presented in the seminar. Education and law enforcement had some effects in reducing law violation but the effects were not constant and stable. Since the previous seminar, the law for transportation renewed by the Iranian parliament after 40 years was put in action. This new law had introduced more severe punishment for driving offences. We reported previously on importance of law enforcement on changing behavior of drivers. (6) Introduction of this new law had major effect on reduction of violation and severity of crashes base on the report provided by police officers in the seminar. It may have been one of the reasons that led to 14.3% decrease in crash deaths from 2011 to March 2012. From March 2012 to February 2013, there was also another 5.2% decrease in death form traffic accidents.

Introduction of culture for transportation to the school curriculum from early stages seems to be more effective in changing behavior with more sustainable effects. Several initiatives have been launched with cooperation of ministry of education with the intention to promote the culture of driving in future.

Conclusion

The third international seminar on reducing burden of traffic accidents, compared to previous two seminars had witnessed more problem oriented research on this important issue. It could build platform for intersectoral discussion of different aspects of traf-

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fic accidents. Presence of policy makers, executive bodies along with academician led to a great success and their cooperation had immediate impact on the Fars province traffic mortality as a model.

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