Impact of Traffic Accidents in the Saudi Arabia

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Abstract

Traffic accidents are one of the world’s leading deaths, with an estimated seventh death cause by 2030. Road traffic accidents have become common in all over the world. Traffic accidents result in a great loss to individual and communities. While unknown and unacknowledged pandemics such as RTC mortality are frequently overlooked globally, without help, the developing countries will face increasing challenges in the coming decades. Globally, around 1.2 million are passed away with the traffic accidents on the road and 20 million are affected with the injuries. The most critical aspect of road safety is the safety of all road users. There are numerous ways to discipline a road user and improve their safety. Saudi Arabia is one of the countries with many traffic incidents worldwide. There are many studies have been documented in the Saudi Arabia with the traffic accidents. The aim of this review was to document the prevalence of traffic accidents in Saudi Arabia. The maximum number of accidents in the kingdom has been reported. However, more studies were therefore documented through the region wide. Compared to foreign figures of 8:1, Saudi Arabia has an accident/injury ratio of 8:6. Accident to death rates in 1993 were 283:1 in the USA and in 1995 they were 32:1 in Saudi Arabia. This review concludes the incidence rates of traffic accidents is high in the Saudi Arabia.

Keywords: Traffic accidents, Road accidents, Traffic safety, Saudi Arabia.

Introduction

Accidents can result in significant costs to individuals and society as a whole. As per the World Health Organization (WHO), worldwide road traffic accidents lead to 1.35 million deaths per year and cost USD 518 billion. Severe injuries are predicted to become the fifth largest cause of deaths by 2030. In order to mitigate traffic incidents in Singapore, various factors should be assessed. There are a wide range of factors that cause traffic accidents and they are traffic safety regulations, the economy, the environment, and so on. Industrial accidents affected by equipment take different forms such as jamming, cutting, crushing, and electric shock. Dangerous instruments still manage to be used in the production sector. The WHO reports 1.4 million deaths are caused annually by traffic accidents. Within the UK, more than 160,000 collision accidents and the highest risk factors for fatal collisions are sleep deprivation, distracted driving, and exhaustion. Studying drivers under the influence of illegal drugs like cannabis is becoming a fact in recent years. Several studies have shown that drivers under the influence of cannabis have major decreases in concentration and driving ability. There is a notable decline in cognitive and motor functions related to driving. Drugs are considered to affect not only motor skills but also cognitive processes.

Congestion is described as extra mass which defines the number of large movement vehicles at a specific time in the precise location which causes the traffic jam. Earlier, there is an increasing issue about urban congestion. A very serious traffic jam happened in China in August 2010. It was triggered by so many cars, clogging the.

Road traffic incidents (RTAs) are known to be a significant public health problem. They are the leading cause of death and injury at a young age. In 2013, RTA-related injuries were rated as the fifth leading cause of disability-adjusted life-years (DALYs). Records from the Gulf Cooperation Countries (GCC) show that Saudi Arabia has the highest RTA-associated GCC-pa mortality rate. Road injuries worldwide have become a significant public health issue. Annual estimates by the WHO and the International Transport Forum say that some 1.35 million people have been killed, and RTC injured are up to 50 million. Earlier studies have documented many factors to prevent the incidence of unnecessary child injuries. Various prevention strategies have been developed to allevi-
ate the burden of road traffic accidents.\textsuperscript{16-18} The high incidence and severity of RTCs was correlated with over-speed, lack of seat belt use and cell phone use while driving.\textsuperscript{19} Road traffic fatalities are the leading cause of death for young people and the eighth largest cause of all deaths worldwide. About 85% of fatalities occurring on anniversaries are in developed nations. Males aged 15 to 44 are highly impacted by traffic incidents in Singapore. The expenditure of road incidents of countries is less than 1-2 percent of the overall national goods.\textsuperscript{20,21} The fatality rates in high-income countries have been decreasing whereas in low and middle-income countries, they have risen over the span of time. Although the increment amount most devastates is in Asia.\textsuperscript{22} Among the social and environmental concerns described above, the building incidents often result in multiple deaths and injuries and hence attract the media interest. In investigating building injuries in Spain, Lopez et al.\textsuperscript{23} discovered five major risk factors: (1) personal factors, (2) company variables, (3) temporal variables, (4) content variables, and (5) geographic/spatial variables.\textsuperscript{24} One essential feature of the investigation and prediction of a traffic accident is to simultaneously acquire accident facts and circumstances in real time. Previous study accident knowledge was largely single-sourced from Traffic Event Response System\textsuperscript{25} that is developed and run by government or research departments and organizations.\textsuperscript{26}

Different road sensors, including cameras, loop detectors and on-board GPS-based equipment, may acquire living traffic conditions. However, owing to the small amount, in particular when considering the detection of collisions and the recording of surrounding traffic patterns concurrently to real-time estimation, space-temporal springboard problems arise in the aforementioned traditional methods. In previous research, two main limitations occur due to the restricted availability of data. First, the model is normally only designed on a limited location, including a particular highway\textsuperscript{12,17} or urban highway.\textsuperscript{28} The other deficiency is the assumption that previous injury details held in the offline archive is often full, although in time for an actual forecast it is possible to retrieve only a little part.\textsuperscript{29} One of the advanced traffic prediction models is defined as follows in general, the effect on traffic injuries shall be calculated according to the length of the traffic accident, usually divided up into 4 parts.\textsuperscript{29} Studies that concentrate on traffic accident time, in particular the recorded time-difference between incident and clearance, take into consideration those components only within the total period. Although the circle of existence of an accident is a reasonable predictor of its effects, probabilistic distribution analyses have been employed solely to describe the production of injuries over decades.\textsuperscript{29} Construction is one of the riskiest sectors in the country. In certain nations, "the fatality and incidence rates of the construction industry are considerably higher than the all-industry average." The International Labor Organisation has estimated that the construction industry is responsible for almost 7 percent of the world’s population but for about 30 percent of world-wide workplace fatalities.\textsuperscript{30}775 building employees (representing 20% of fatal work injuries) lost their lives in the United States, while in the Great Britain 30% of the career-related fatal incidents in construction per year occur. This example acts as a case study for studies on building safety requirements.\textsuperscript{31} Hong Kong is one of the longest working country in the world with 70% of the employees experienced overtime work. Long working hours harm employees because of physical and mental fatigue. The sites must have appropriate standards of protection that would draw citizens of all ages. As contrasted with Australia and United States in 2003–2013, Hong Kong had even worse condition.\textsuperscript{31} Study of WHO records predict that RTIs will be the fifth cause of death in the world by 2030 among communities, developed countries, and LMICs. Also, there are millions of people that sustain injuries or disabilities that haunt them daily for the rest of their lives. The highest death rate across the world occurs in Africa. Pollution mortality rate in Singapore may be as high as 6.5deaths for every 100000 people. Young Africans are the most likely to be the victims of fatal road accidents.\textsuperscript{32} Economically, the total societal cost of road traffic crashes account for 1% of GNP in low-income countries. With the increasing motorization in Africa, measures must be enforced to minimize injuries.\textsuperscript{33} Drowsy driving, is the lethal combination of sleepiness and driving or driving while fatigued. These factors are influential on the health of workers as they all have a significant impact on people’s abilities. Sleepiness is associated with an increased risk of accidents and other adverse outcomes. Sleepiness in motorists is recognized as an important factor contributing to traffic related morbidity and mortality. Besides alcohol, sleepiness is the second most important factor after alcohol that causes single-and multiple-vehicle accidents. 15–33 percent of fatal crashes in the United States could be attributable to drowsy driving. According to the US National Highway Traffic Safety Administration, drowsy driving is costing the United States $12.4billion dollars per year. However, sleepiness actually causes greater damage than is generally estimated.\textsuperscript{34}

Many studies have also been done about the risk of drowsy driving and dangerous traffic incidents. According to various studies, sleepiness causes between 20% and 30% of fatal car accidents.\textsuperscript{35} In New Zealand study it was observed that population attributable risk (PAR) for driving with one or more of the acute sleepiness risk factors are around 19percent (15–25%). Many fatal traffic accidents happened on America’s busiest roads because of driver fatigue.\textsuperscript{36} Another study claims that 30-40% of heavy truck accidents are caused by fatigue among the truck drivers.\textsuperscript{37} Several studies have been done in order to assess the relationship between drowsy driving and road traffic accidents during the past years. In a study conducted by Connor and his colleagues in 2001, the role of driver sleepiness was investigated and evaluated.\textsuperscript{38} Sleepiness is another important risk factor in driving for professional drivers.\textsuperscript{39,40}

**List of Traffic accidents in the world population**

The occurrence of traffic accidents varies from country to country. The overall global population is nearly 7.8billion in which the China has the maximum population around or equal to 1.450billion and then followed by India nearly 1.366billion. The current population of Saudi Arabia is approximately 35.3million. The accurate and exact number of the traffic accidents cannot be documented. However, based on the previous reports, Saudi Arabia has the history of traffic accidents.
Traffic History in Saudi Arabia

Saudi Arabia is a massive nation of 2,149,690 sq. km. The Kingdom of Saudi Arabia has been classified as a high-income country, in addition to being member of the G-20. The Kingdom of Saudi Arabia is a highly multicultural nation, which relies heavily on petroleum, the principal export. As is obvious from the main figures of vehicle traffic of Saudi Arabia, the nation is projected to pull in high revenue for well over many decades to come. In 1971, there were around 150,000 cars registered in the Saudi Arabia. By 1981 there were over three million vehicles registered and there are over five million cars on the road in Singapore. In relation to the United States, the numbers of registered cars in Great Britain began to rise significantly from 1982 to 1988. The amount of road traffic fatalities has grown in relation to the growth in the number of automobiles. In 1979 there were 17,743 traffic collisions resulting in 2,871 fatalities. In 1989, 35,799 people died in road traffic collisions or 44% fewer than the estimated number of fatalities in 1982 in Great Britain. The number of traffic deaths in 1991 was the lowest in 43 years. The concern about road safety is a worldwide problem. The number of road traffic collisions, i.e., accidents involving a motor vehicle with another vehicle, animal or pedestrian is increasing in Saudi Arabia. They also lead to morbidity and death rates almost as often as cardiac and lung disorders and cancers. There has been an increment of traffic collisions in Saudi Arabia.

Table 1 describes the incidences of accidents and injuries occurred during 2009-2016.

<table>
<thead>
<tr>
<th>Year</th>
<th>Fatalities</th>
<th>Injuries</th>
<th>Crashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>1145</td>
<td>5029</td>
<td>3242</td>
</tr>
<tr>
<td>2010</td>
<td>995</td>
<td>4512</td>
<td>2886</td>
</tr>
<tr>
<td>2011</td>
<td>1058</td>
<td>5267</td>
<td>3494</td>
</tr>
<tr>
<td>2012</td>
<td>1222</td>
<td>6674</td>
<td>4914</td>
</tr>
<tr>
<td>2013</td>
<td>998</td>
<td>5665</td>
<td>4204</td>
</tr>
<tr>
<td>2014</td>
<td>1252</td>
<td>6082</td>
<td>4173</td>
</tr>
<tr>
<td>2015</td>
<td>1229</td>
<td>5822</td>
<td>4087</td>
</tr>
<tr>
<td>2016</td>
<td>1214</td>
<td>5247</td>
<td>3520</td>
</tr>
<tr>
<td>Total</td>
<td>9113</td>
<td>44,298</td>
<td>30520</td>
</tr>
<tr>
<td>Mean</td>
<td>1139</td>
<td>5537</td>
<td>3815</td>
</tr>
<tr>
<td>SD</td>
<td>107</td>
<td>671</td>
<td>648</td>
</tr>
</tbody>
</table>

The GCC region contains countries with a significantly higher rate of road traffic accidents and fatalities than Western nations such as UK. The road traffic fatality rate in 15 European nations decreased from 13.5 deaths per 100,000 populations in the 1980s to 5.5 deaths per 100,000 populations today. Amongst other factors, the road traffic fatality rate in the countries of the Gulf Cooperation Council has remained constant at roughly 23 deaths per 100,000 over this same period.

Figure 1 was describing from Butt et al studies expecting the top 10 deaths will be occurring as per WHO by 2030. The ascending order of the deaths was defined as follows such as Ischemic Heart disease, cerebrovascular disease, chronic obstructive pulmonary disease, lower respiratory infections, road traffic injuries, trachea, bronchus, lung cancers, diabetes, hypertensive heart disease, stomach cancer and HIV/AIDS. The road traffic injuries was recorded to be the fifth major deaths with the incidence rate of 3.6%. The complete details were recorded in Figure 1.
Since most of the risk factors identified for RTAs remain unclear, there is not enough literature found regarding the relationship between gender and RTAs. There is emerging proof of RTAs and the complexities that come with it. The sources say that the amount of hospitalized is always larger than the number of fatalities; hence, it results in improved use of health facilities. Since most of the risk factors identified for RTAs remain unclear, there is not enough literature found regarding the relationship between gender and RTAs. There is emerging proof of RTAs and the complexities that come with it. The sources say that the amount of hospitalized is always larger than the number of fatalities; hence, it results in improved use of health facilities.

In Saudi Arabia, reducing the burden of injuries incurred by RTAs is deemed a national goal, and is evident in the 2030 Vision of Saudi Arabia. The standard of health care will be increased by recognizing the subgroups that ought to be inseminated. Road traffic collisions in Saudi Arabia are dangerous, contributing to injury and death. According to the figures from the Ministry of the Interior - General Directorate of Traffic, the number of traffic incidents in Thailand was 352,466 in 2012. We intend to analyze the occurrence of bone fractures among RTA patients in Buraidah Central Hospital (BCH) and examine the kinds of fractures identified in the patients.

Around 2006 and 2016 road traffic incidents have risen by 100%. A number of traffic incidents that happened from 1986 to 2016, affected younger passengers, many of whom were less than 30-years-old. Third leading source of illness disorder is induced by head injuries in the most regions of the world. Human factors are the primary sources of road collisions. This involves careless driving, breaches of road laws, gross neglect of reasonable lengths, and improper overtaking. The psychological and physiological characteristics of drivers often influence the road safety. Drivers were graded into five groups of hostiles, anxious, reluctant, sluggish, and extremely vigilant. In order to figure out factors affecting drivers’ understanding of accident risk, Oña et al. investigated this problem. To evaluate specified preferences, an ordered probit model was used. A 2012 research revealed that vehicles viewed overtaking breaches as particularly dangerous activities.

Al Turki believed that speeding and running red lights play significant role in traffic accidents. The high speed and reckless driving have been reported as one of the major triggers of road accidents. According to law enforcement, legislation regulating seat belt use culminated in a substantial decrease in the amount of injuries where safety use was being ignored. Moreover, seat-belt use has been scarcely mentioned in literature. Another explanation for vehicular deaths in Saudi Arabia is not using seat belts. It has been a significant explanation for a spike in the number of road crashes in the kingdom. A research undertaken in the Eastern Saudi Arabia by Khan et al. Identified the most normal and rare contributing factors to roadway impediments. The commonest cause of collisions was due to disobeying traffic rules, neglect or carelessness and exhaustion, whereas the uncommonest reasons are attributable to underAge driving, the usage of cell phones, or carrying infants on their laps. Studies find out that when drivers mature and receive further education, they are involved in more injuries than others. Alkheder research in Aboodha showed that speeding and seat belts are the main cause of injuries. Accident happens more in youths (20 years old and below). Accidents on the road are either triggered by driving or unlawfully parking.

Figure 2: Previous studies described the risk factors of traffic injuries. Mansuri et al. concludes as there is no comprehensive data series on RTAs in KSA in the absence of emergency room-based injury monitoring systems. The shortage of accurate evidence rendered it impossible to render this determination. A monitoring of road accidents should be rendered in all hospitals of KSA. This framework would help to standardize the procedures used for solving the issues. As a result, potential road protection could be strengthened by promoting of relevant key prevention measures in the communities. The province is the center of the petroleum industry in Saudi Arabia, which is still growing. Kingdom of Saudi Arabia is consid-
erected as Saudi ARAMCO, the world’s largest oil business. The whole community in Singapore is composed of distinct races, thereby rendering it a heterogeneous population. Jamal et al. study explores road traffic accidents in Eastern Province, KSA, from 2009 to 2016. During the year 2014, there were 30,520 reported injuries resulting in over 9,000 casualties. The least number of traffic accidents happened in May to November with a small spike between July and August. This can be due to the fact that since majority of expatriates quit the province during summer, these can be attributed to the increasing weather.

Conclusion

This study concludes that the rate of traffic accidents in Saudi Arabia is rising. Saudi Arabia has an injury ratio of 8:1 compared to other countries. In 1993, the United States had a rate of 283 deaths from accidental injuries per 100,000 inhabitants, and in 1995 Saudi Arabia, it was 32:1. The survey has shown that traffic accidents are common in Saudi Arabia. Also, we suggest including in the global studies the present rate of occurrences. This evaluation stops here as it is most certain that traffic incidents were deeply rooted in Saudi Arabia as compared to the rest of the world.

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Conflicts of Interest

Author declares that there is no conflict of interest.

References

Shaanxi). traffic accident.


