

Epidemiological Profile of Road Traffic Accidents on Khartoum – Medani Highway, Sudan

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Abstract:

A descriptive study of road traffic accidents on Khartoum – Medani highway, Sudan was conducted to investigate epidemiological profile of the problem throughout a year. Relevant records and monthly reports of Traffic General Administration were reviewed. A total of 231 accidents occurred, which resulted in death of 91 individuals and some injuries. The study revealed that, about 72(31.2%) of accidents led to injuries while 61(26.4%) led to death and injuries. The majority of victims were males of working age (25 – 44). The main causes behind these accidents were incorrect passing of vehicle (32.3%), incorrect crossing of pedestrian (30.8%), high speed (22.6%) and driving under influence of alcohol (7.5%). Most of accidents occurred in November 29(12.55%) and on Thursday 30(22.6%). The study concluded that, road traffic accidents on Khartoum – Medani still occurred in high proportion and it is a major death-leading cause.

Key words: Epidemiological, Road, Traffic, Accidents, Highway, Sudan

Introduction

Road traffic accidents are considered as public health problem world-wide. Each year, nearly 1.3 million people die as a result of a road traffic collision— more than 3500 deaths each day, moreover twenty to fifty million more people sustain non-fatal injuries from a collision, and these injuries are an important cause of disability worldwide (Ashish and Devang, 2011). Recent studies have shown an increase in the rate of road traffic accidents (RTA) in many developing and developed countries. This is attributed in part to urbanization, industrialization, as well as the increase in the number of motor vehicles on the roads (Charles et al, 2007).

By 2020, road traffic accidents will move from being the 9th leading cause of disability-adjusted life years lost to the 3rd leading cause in the world and will be 2nd leading cause in developing countries (Abhishek et al, 2011)). The problem is increasing at a fast rate in developing countries due to rapid motorization and other factors (Issam et al, 2012).

Fortunately, road traffic injuries can be prevented, and their consequences can be alleviated. This achieved in many countries by enforcement of traffic laws as regards to speed limits, alcohol drink, use of seat-belts, advocacy ... etc (Khare et al, 2012).

In Sudan, road traffic Accidents problem is one of the major health concerns because of the high rate of population growth, the large percentage of young drivers, large number of vehicles, the absence of strict law enforcement and the poor road conditions (Ahmed and Gasmelseed, 2014).

Materials and Methods

Study area

Khartoum – Medani highway is oldest and important one of national highways in Sudan. It is established in 1963 to link

the Khartoum city, the capital of Sudan, with Medani town, the capital of Aljazeera state. The length of the highway is about 186 km and its width is not more than 6.5 metre. It is used in two directions without separation between them. A lot of villages disperse on the sides of such highway, in addition to intensive movement of animals and pedestrians crossing the highway.

Data collection methods

The relevant data were collected by reviewing records and monthly reports of Traffic General Administration throughout a year.

Results

The findings illustrated that, about 231 accidents occurred on Khartoum – Medani highway in a period of year. Of them, 72(31.2%) resulted in injuries and 61(26.4%) led to deaths and injuries (table 1). In table 2, the highest percentage of death (43.9%) occurred in age group of 25 - 44. The death was more frequent among males (72.5%) than females (table 3). Incorrect passing of vehicle is a major cause of accidents (32.3%) followed by incorrect crossing of pedestrian (30.8%), high speed (22.6%) and driving under influence of alcohol (7.5%) as shown in table 4. November and December witnessed high percentage of accidents, 12.55%and 9.96% respectively (table 5), also high percentage of such accidents occurred on Thursday (22.6%) in table 6.

Table (1): Distribution of road traffic accidents on Khartoum – Medani highway according to result of accident.

| Accident | No | % |
|--|-----------|----------|
| Accidents resulted in injuries | 72 | 31.2 |
| Accidents resulted in deaths and injuries | 61 | 26.4 |
| Accidents resulted in no death or injuries | 98 | 42.4 |
| Total | 231 | 100 |

Table (2): Age distribution of people killed in road traffic accidents on Khartoum – Medani highway.

| Age group | No | % |
|--------------|----|------|
| <16 | 12 | 13.2 |
| 16 - 24 | 9 | 9.9 |
| 25 - 44 | 40 | 43.9 |
| 45 - 64 | 18 | 19.8 |
| >64 | 4 | 4.4 |
| Unidentified | 8 | 8.8 |
| Total | 91 | 100 |

Table (3): Sex distribution of people killed in road traffic accidents on Khartoum – Medani highway.

| Sex | No | % |
|--------|----|------|
| Male | 66 | 72.5 |
| Female | 25 | 27.5 |
| Total | 91 | 100 |

Table (4): Causes of road traffic accidents resulted in injuries and/or death on Khartoum – Medani highway.

| Cause of accident | No | % |
|------------------------------------|-----|------|
| Incorrect passing of vehicle | 43 | 32.3 |
| Incorrect crossing of pedestrian | 41 | 30.8 |
| High speed | 30 | 22.6 |
| Driving under influence of alcohol | 10 | 7.5 |
| Explosion of tyre | 6 | 4.5 |
| Incorrect pick-up | 3 | 2.3 |
| Total | 133 | 100 |

Table (5): Distribution of road traffic accidents resulted in injuries and/or death on Khartoum – Medani highway according to result of accident.

| Month | No | % |
|-----------|----|-------|
| January | 13 | 5.63 |
| February | 10 | 4.33 |
| March | 12 | 5.19 |
| April | 22 | 9.52 |
| May | 16 | 6.93 |
| June | 24 | 10.39 |
| July | 19 | 8.23 |
| August | 23 | 9.96 |
| September | 19 | 8.22 |
| October | 21 | 9.09 |
| November | 29 | 12.55 |
| December | 23 | 9.96 |

| | | |
|-------|-----|-----|
| Total | 231 | 100 |
|-------|-----|-----|

Table (6): Distribution of road traffic accidents resulted in injuries and/or death on Khartoum – Medani highway according to the day of accident.

| Day of accident | No | % |
|-----------------|-----|------|
| Saturday | 14 | 10.5 |
| Sunday | 14 | 10.5 |
| Monday | 21 | 15.8 |
| Tuesday | 19 | 14.3 |
| Wednesday | 20 | 15 |
| Thursday | 30 | 22.6 |
| Friday | 15 | 11.3 |
| Total | 133 | 100 |

Discussion

The findings illustrated that, a considerable number of accident led to deaths and injuries. In this study, about 43.9% of killed people in road traffic accidents were in age group (25 – 44 years) whom are reproductive age leading to enormous effect on economic status of many families.

Most of victims (72.5%) were males compared with females, it might attribute to that in Sudan males used motor vehicles as riders or drivers more than females. Many studies in different countries reported similar findings e.g. in Rural Haryana that majority of the road traffic accidents victims (79.47%) were in the age group of 15 to 50 years (Abhishek et al, 2011). Also in India, almost 75% of the victims were < 40 years, with the male to female ratio of 8.3:1 (Nirmalya et al, 2012). In Ghana, road traffic accidents are responsible for a far higher rate of death among men, by an approximate ratio of 3:1 (Christian and John, 2014).

The present study found some causes behind the road traffic accidents such as incorrect passing of vehicle, incorrect crossing of pedestrians, high speed and driving under influence of alcohol. Vimala and Lavanya (2013) found that Type of

vehicle and use of alcohol were associated with increased occurrence of road traffic accidents. Also in Sudan, it has been reported that over speeding remains the main cause of accidents resulting in severe injuries with disabilities (Ahmed and Gasmelseed, 2014).

The high percentage of road traffic accidents were recorded in November and December, the months witness heavy movement on the highway as well as on Thursday which is weekend in Sudan and most of people return back from Khartoum to their relatives and homes in the nearest towns and villages.

Conclusion

Road traffic accidents represent a major public health problem on Khartoum – Medani highway. The majority of victims were males and working age group. Weekends witnessed highest proportion of road traffic accidents.

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