

Epidemiological Pattern of Road Traffic Accident in Hodeida city, Yemen

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Abstract: Road traffic accident injuries affect 20 to 50 million people worldwide every year, causing premature death or disability as well as incurring large costs to individuals and society. A descriptive cross-sectional design was conducted to study the epidemiological pattern of road traffic accidents in Hodeida city, Yemen. It included (384) victims of road traffic accidents. The proportion of road traffic accident cases was 11% from the total patients whom admitted to emergency departments of hospitals, about One third (32.3%) were between 25 – 44 years age group, and 89.6% were males. About 32.8% had primary and intermediate education. (35.4%) occurred between 12 noon and 6 pm. Most of them in September (14.6%), the majority (56%) of the victims were using two-wheeled motorcycle, and pedestrians were the most frequent category of road users (36.5%). The majority of accidents occurred due to road condition at intersections (35%), most accidents due to sunny weather 40.1%. Most of the causes of traffic accidents were due to high speed (34.1%), drivers' negligence (14.3%) and negligent road crossing. We recommended that the public road safety campaigns should be conducted, new driving license system should be imposed.

Keywords: Epidemiological pattern, Hodeida city, Road traffic accidents, pattern injuries.

1. INTRODUCTION

Road traffic accident (RTA) has become an important public health concern over the past decades as an estimated Global figure of 1.3 million people loses their lives in every year. It is believed that almost 3,400 lives were lost every day and millions of people suffer various degrees of injuries and disabilities as a result of RTA. These injuries and deaths, according to the World Health Organization (WHO) have immense influence on victims' families, employment and communities they belong, whose lives are often changed irreversibly by these calamities. Currently, road traffic casualties rank 9th in the "Global Burden of Diseases" but expected to become the 3rd leading cause of death and disability by the year 2020 except fresh, effective and efficient safety actions were engaged (1)(2). Formally road traffic injuries were the leading cause of permanent disability and mortality among those in productive age in developed countries but currently the developing countries are also faced by a similar challenge as they undergo what has been termed as the "epidemiology of transition"(3). Every tenth bed in a hospital is occupied by an accident victim. The average cost of RTA in developing countries is estimated at 65 billion dollars; the global annual cost of is almost 230 billion dollars (4).

In addition to that trends to continue and road traffic injuries are predicted to be the third-leading contributor to the global burden of disease and injury by 2020(4).

World Health Organization warns in its reports issued the high proportion of victims of traffic accidents to 80% by 2020 , if it does not have the political will take the necessary precautions, especially in low-income countries, or average, in addition to the psychological and social effects and consequences of the physical ability about more than 65 billion dollars a year (More than what you get with low-income countries, or an average of development aid). However, in the Arab world the road traffic accidents in 2000, represents 19.2% per 100,000 population, and the report is expected to rise by 2020 to the extent of 22.3% per 100,000 population (that these figures far exceed what causes wars, epidemics and disasters)(5).

In Sana'a city road traffic accidents account of 40% of total incidents in Yemen according to a report Husbandry public for the passage of the Secretariat of the capital for the year(6) .Then Hodeida where we conducted this study come second level .

This figure is not easy which drew my attention to this subject and choose this place. Road traffic accidents constitute one of the problems of daily experiences in the Yemeni society like other countries of serious repercussions. Also as a serious damaging life and property. They were concerned in various health institutions and in economic, social and security services. The highly spread of the epidemic in Yemen, especially in capital Sana'a city and port (Al-Hodeida) were due to the large number of population and vehicle ownership or users , resulting in an increase of death cases or (patients who occupy a large percentage of hospital beds). As a result, families were affected too, especially when the victim is the only source of income in the family and add to the ranks of the disabled people. Alienposea significant burden on public health and society where a heavy debt and poverty. Road traffic accidents and injuries related it remains a major cause of morbidity and mortality in those of productive age in developing country. Yemen being one of the developing countries is also expected to experience the road traffic accident epidemic. Injuries and death from road traffic accident are expected to increase if no preventive measures are made. The observed increase in number of registered vehicle in Yemen is also expected to reflect the increase trend of road traffic injuries. A Road traffic accident is a complex problem in reasons (risk factor) and injuries resulting from country to country and even within the same country .Knowledge with the reasons of road traffic accident may help in prevention and treatment. Our study aimed to assess the epidemiological pattern of road traffic accidents and its risk factors.

2. MATERIAL AND METHOD

A descriptive cross-sectional (hospitals, traffic department) based study was conducted in Hodeida city ,Yemen.

Our Study population comprised Injuries of road traffic accidents who were admitted the targeting hospitals through the period of study.

All road traffic accident cases that were enrolled in General Al-Thorah Hospital and military Hospital included 384 patients.

The data analyzed by using(SPSS) version (16), and EXCEL Program.-chi-square test applied to test the significance of relationship between categories variables where only values equal to or less than 0, 05 will be considered as significant.

3. RESULT

Table (1): Demographic Variables associated with Road Traffic Accident, Hodiedah, 2017.

Demographic Variables		Frequency	Percentage (%)
Sex	Males	344	89.6
	Female	40	10.4
Age (Years)	<16	92	24.0
	16-24	116	30.2
	25-44	124	32.3
	45-64	44	11.5
	>64	8	2.1
Marital state	Single	188	49.0
	Married	182	47.4
	Divorced	7	1.8
	Widow	7	1.8
Occupation	Employed	41	10.7
	skill worker	81	21.1
	soldier	32	8.3
	housewife	17	4.4
	farmers	15	3.9
	business	11	2.9
	student	116	30.2
	unemployed	40	10.4
	others	31	8.1

Demographic Variables		Frequency	Percentage (%)
Education level	literature	30	7.8
	Able to reading	72	18.8
	Primary school level	126	32.8
	Secondary school level	83	21.6
	University level	61	15.9
	Others	12	3.1
Socioeconomic status	Upper class	48	12.5
	Moderate class	144	36.5
	Lower class	40	10.4
	Not respond	152	39.6
Place of living	Urban	279	72.7
	Simi-urban	84	21.9
	Rural	21	5.5

Table (2): Age and Sex Distribution of Road Traffic Accident in Hodeida City 2017.

Age	Sex		Total
	Male	female	
<16	74	18	92
	19.3%	4.7%	24.0%
17-24	112	4	116
	29.2%	1.0%	30.2%
25-45	112	12	124
	29.2%	3.1%	32.3%
46-64	39	5	44
	10.2%	1.3%	11.5%
>64	7	1	8
	1.8%	.3%	2.1%
344	40	384	
89.6%	10.4%	100.0%	

P-value = .006, n = (384), P-value considered significant at 0.05 levels

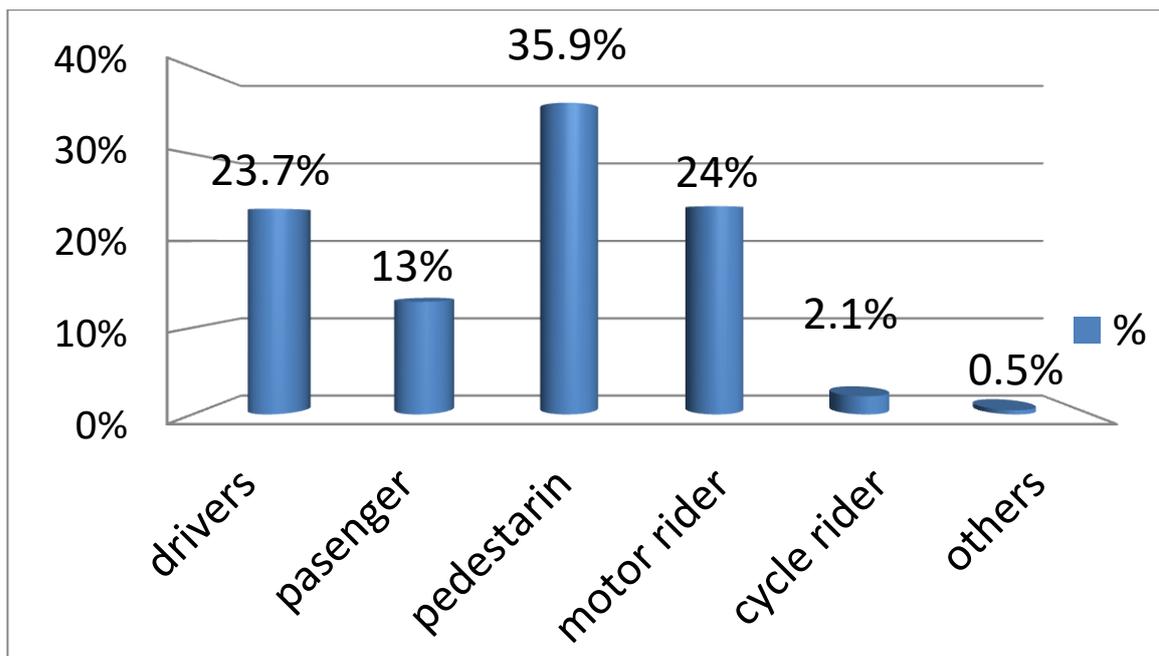


Figure (1): Distribution of RTAs According to the Type of Road User's Victims in Hodeida City, 2017.

Table (3): Cross tabulation between type of road users and type of injury, Hodeida, 2017

Road users	Type of injury							Total
	Abrasion	contusion	incised	laceration	fracture	mixed	others	
Drivers	14	5	24	3	26	18	1	91
	26.9%	21.7%	18.5%	42.9%	25.5%	27.7%	20.0%	23.7%
passengers	4	7	18	0	12	9	0	50
	7.7%	30.4%	13.8%	.0%	11.8%	13.8%	.0%	13.0%
pedestrians	17	5	45	4	39	26	2	138
	32.7%	21.7%	34.6%	57.1%	38.2%	40.0%	40.0%	35.9%
motor rider	17	6	35	0	23	9	2	92
	32.7%	26.1%	26.9%	.0%	22.5%	13.8%	40.0%	24.0%
cycle rider	0	0	6	0	1	1	0	8
	.0%	.0%	4.6%	.0%	1.0%	1.5%	.0%	2.1%
Caro rider	0	0	1	0	0	1	0	2
	.0%	.0%	.8%	.0%	.0%	1.5%	.0%	.5%
Others	0	0	1	0	1	1	0	3
	.0%	.0%	.8%	.0%	1.0%	1.5%	.0%	.8%
Total	52	23	130	7	102	65	5	384
	100%	100%	100%	100%	100%	100%	100%	100%

P-value .044= (384), P-value considered significant at 0.05 levels

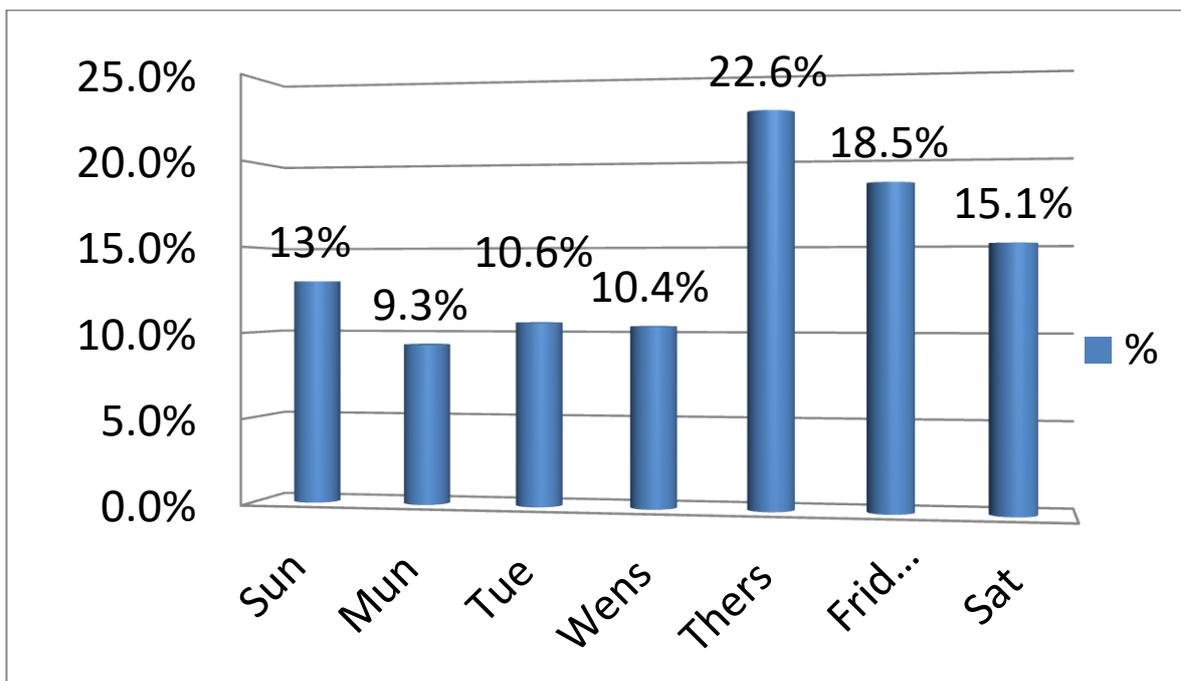


Figure (2): Distribution of accidents according to the days of the week In Hodeida City 2017.

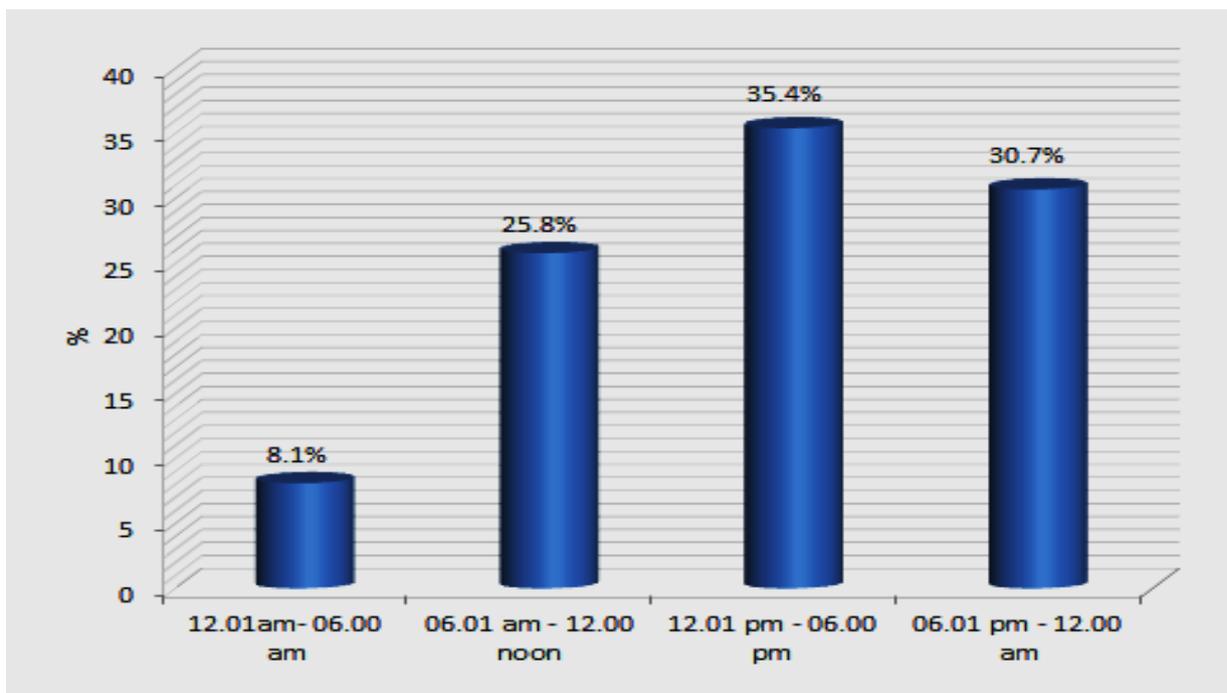


Figure (3): Distribution of RTAs according to the time of accident in Hodeida City, 2017.

Table (4): Cross tabulation between type of vehicle and types of injuries, Hodeida, 2017.

Type of vehicle	Type of injury							Total
	abrasion	contusion	incised	laceration	fracture	mixed	others	
Motorized 4wheeled cars	10	8	28	2	31	32	1	112
	19.2%	34.8%	21.5%	28.6%	30.4%	49.2%	20.0%	29.2%
Motorized 2wheeled	37	9	86	2	55	22	4	215
	71.2%	39.1%	66.2%	28.6%	53.9%	33.8%	80.0%	56.0%
Motorized 3wheeled	1	1	4	0	4	1	0	11
	1.9%	4.3%	3.1%	.0%	3.9%	1.5%	.0%	2.9%
heavy vehicles	0	1	0	1	4	3	0	9
	.0%	4.3%	.0%	14.3%	3.9%	4.6%	.0%	2.3%
Buses or Public vehicle	4	4	10	2	8	7	0	35
	7.7%	17.4%	7.7%	28.6%	7.8%	10.8%	.0%	9.1%
Caro	0	0	2	0	0	0	0	2
	.0%	.0%	1.5%	.0%	.0%	.0%	.0%	.5%
Total	52	23	130	7	102	65	5	384
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
% Of Total	13.5%	6%	33.9%	1.8%	26.6%	16.9%	1.3%	100.0%

P-value = .014, n = (384), P-value considered significant at 0.05 levels

Table (5): Cross tabulation between type of road and type of accident, Hodeida, 2017.

Type of road	type of accident (collision)									Total
	Cars crash	motor crash	run over pedestrian	fall	face to face	side way	crash with fixed object	cars with motor	others	
crowded	1	4	36	7	1	0	1	5	1	56
	3.30%	10.50%	25.70%	7.30%	20.00%	0.00%	25.00%	19.20%	3.00%	14.60%
crossing road	16	15	27	14	4	8	1	11	9	105
	53.30%	39.50%	19.30%	14.60%	80.00%	66.70%	25.00%	42.30%	27.30%	27.30%
broken road	2	10	21	34	0	1	2	1	15	86
	6.70%	26.30%	15.00%	35.40%	0.00%	8.30%	50.00%	3.80%	45.50%	22.40%
poor lighting	1	1	5	1	0	0	0	1	1	10
	3.30%	2.60%	3.60%	1.00%	0.00%	0.00%	0.00%	3.80%	3.00%	2.60%
mud	0	1	3	2	0	0	0	0	1	7
	0.00%	2.60%	2.10%	2.10%	0.00%	0.00%	0.00%	0.00%	3.00%	1.80%
straight road	3	2	23	10	0	0	0	1	0	39
	10.00%	5.30%	16.40%	10.40%	0.00%	0.00%	0.00%	3.80%	0.00%	10.20%
sloping road	1	2	4	17	0	0	0	1	2	27
	3.30%	5.30%	2.90%	17.70%	0.00%	0.00%	0.00%	3.80%	6.10%	7.00%
cycle	6	3	16	10	0	3	0	5	2	45
	20.00%	7.90%	11.40%	10.40%	0.00%	25.00%	0.00%	19.20%	6.10%	11.70%
Others	0	0	5	1	0	0	0	1	2	9
	0.00%	0.00%	3.60%	1.00%	0.00%	0.00%	0.00%	3.80%	6.10%	2.30%
Total	30	38	140	96	5	12	4	26	33	384
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	7.80%	9.90%	36.50%	25.00%	1.30%	3.10%	1.00%	6.80%	8.60%	100.00%

P-value = .000, n = (384), P value considered significant at 0.05 levels.

4. DISCUSSION

Road traffic accidents are global problem, and an endemic disease which affects mainly young people .who are in the prime of their lives. In middle age, the leading causes of death are traffic accidents. They constitute the most common cause of traumas. They are part of the price we pay for technological progress.

The proportion of RTA cases was 11% (384/3490) and these cases constituted all admitted patients to emergency trauma department with different injuries. Krug E(135)reported that injuries contribute to around 10% of total deaths and 15% of disability-adjusted life years(DALYs) globally. Recent studies suggest that injuries contribute to 13%–18% of total deaths. Oderoet al.(19) in a survey of 23 hospitals in Bangalore, RTIs contributed to 12% of total casualty registrations (varying from 7% to 34%in different institutions), 52% of total injury registrations, 22% of admissions, 6% of total casualty deaths and 35% of injury deaths.

Nearly one third (32.3%) of the study population belong to the age group of 25-44 years. It was also observed (24%) were children below 16 years of age. The sex wise distribution revealed that among the study subjects (89.6%) were males and (10.4%) were females.

We recommend to the authorities with the following measures the need for large prospective studies that would assist various organizations to set and plan preventive programmers. Public Education on safe road crossing procedures should be conducted by the Road Safety Unit and the National Road Traffic Safety directorate in terms of information and campaign using the radio and television. As far as students are concerned, the campaign should be conducted in schools, Include traffic safety culture within the school curriculum.

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