A Cross-Sectional Retrospective Study of Boda Boda Injuries At Mulago Hospital IN Kampala-Uganda.

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Background: During the last 5 years, many Ugandans have resorted to use of small Motorbikes popularly known as "Boda-boda", as quick means of Transport. The Boda Bodas that have been mainly operated by the youths as a means of public transport have been responsible for many "accidents". The purpose of this paper is to highlight the Musculo -Skeletal Injuries that directly or indirectly result from Boda Boda Traffic "accidents", with a view of assisting the policy makers in their efforts of reducing Road Traffic Accidents in Uganda.

Methods: This was a cross-sectional retrospective study conducted at Mulago Hospital on the Surgical and Orthopaedics Wards. Records of patients admitted through the emergency admitting ward for the period July - September 2001 were studied.

Results: During the period under study, a total of 182 road traffic injuries were admitted. 46 (25%) of these were as a result of Boda Bodas. The commonest injury was Open Tibial Fractures (21%). The majority of the victims (20%) had poly trauma. The motorcyclists were mainly youths with an average age of 24 years.

Conclusion: Strict legislature should urgently be put in place to curb the reckless motorcyclists as an effort to control these emerging traffic injuries.

Introduction

Road Traffic Injuries are the leading causes of surgical admission at Mulago Hospital. This is mainly because of reckless Taxi operators on poorly designed roads. The taxis include small saloon vehicles, 14-seater commuter mini buses, and the big coaches. Of late, bicycles and motorbikes have been introduced as a means of public transport in addition to the taxis as form of employment for the Ugandan youth. These privately operated motocycles are popularly known as Boda-Bodas by the Ugandans, a name that originated from the bicycle form of public transport that is popular at the border between Uganda and Kenya.

These Boda Bodas are small motorcycles, (Suzuki's and Yamaha's) whose capacity is 50 and 80 cc respectively, and tyre size is 250/h.

According to the Registrar of motor vehicles in Uganda, a total of 73,788 motorcycles have been imported in Uganda during the last 5 years, the majority of which are Boda-Bodas. These Boda Bodas operate in all parts of the country as public transport for persons and cargo. The motorcyclists and the passengers don't wear any protective gear for their safety.

Quite often, a Boda Boda carries more than 2 passengers including the motorcyclist. Male passengers get behind the motorcyclist their feet well placed on the foot rests. However, females, with their long dresses prefer sitting side ways. Because of greed for money, the motorcyclists tend to over-speed, and ride in a zigzag fashion to beat the traffic Jam. The Boda Bodas operate a 24-hour service but are busiest during the peak hours of the day. Some of these motorcyclists are unlicensed, and it is believed that some of them ride under the influence of alcohol or drugs. The majority don't undertake a motorcycle rider's course before starting this business. As a result of these risk factors, Boda-Bodas have been responsible for serious injuries some of which have been fatal. It was with this background that the author decided to undertake this study.

This study was aimed at establishing the prevalence and pattern of Boda Boda related injuries in Kampala, Uganda and determining the risk factors that contributed to Boda-Boda Road Traffic Injuries.

Patients and Methods

A retrospective cross-sectional study was conducted at Mulago Hospital, the National Referral, and University Teaching Hospital. Records of patients admitted through the emergency admitting ward for

the period July - September 2001 were studied. All patients admitted with traffic injuries were included. Other surgical injuries
due to assault, sports injuries, falls from heights, gunshot injuries were excluded. Factors studied included, age of the patients, sex, occupation, type of the traffic injuries, and how the victims sustained these injuries.

Results

Table 1 shows the distribution of road traffic injuries by mode of transport used. Boda Boda injuries accounted for a quarter (25%) of cases. Pedestrians and the motorcyclists themselves were injured in 78% of Boda Boda "accidents" (Table 2).

There were 146 males and 36 females (Male: Female ratio = 4:1). The ages of the injured Boda Boda cyclists ranged between 14 and 28 with a mean of 24 years. The pedestrians' ages ranged from 9 to 80 with an average of 29 years. The Boda Boda passengers' ages were from 18 t0 36 years with a similar average of 29 years. Table 3 shows the mechanism of the Boda Boda crushes. The majority crushed into moving vehicles.

Table 4 shows the occupations of the victims. Tables 5 and 6 show the nature of injuries sustained. Tale 7 shows the number of registered motorcycles annually.

Table 1. Admission of Road Traffic Injuries at Mulago Hospital.

Cause	Total No	Percentage
Motor vehicles	131	72%
Boda-Bodas	46	25%
Bicycles	5	3%
TOTAL	182	100%

Table 2. Distribution of Boda Boda injury Patients

Pedestrians	17	37%
Motorcyclists	19	41%
Passengers	10	22%
TOTAL	46	100%

Table 3. Mechanism of the Accident

Mechanism	Number of cases	Percentage
Boda Boda Vs Motor Vehicles	**28**	61%
Boda Boda Vs Pedestrian	17	37%
Boda Boda Vs Boda Boda	1	2%

Table 4. Occupation of the Injured

Occupation	No of cases	Percentage
Self Employed	40	54.7%
Students	11	15.0%
Peasants	11	15.0%
Public/ Civil Servants	6	8.2%
Children	3	4.1%
House wives	2	2.7%

Table 5. Nature of Injuries sustained

Types of Injuries	Total	Percentage
Head injuries	9	10.3%
Flaccid injuries	7	8.1%
Trunk	3	3.5%
Pelvis	2	2.3%
Upper Extremity	7	8.1%
Lower Extremity	28	32.2%
Multiple injuries	17	19.5%
Soft Tissue injuries	14	16.1%
Grand Total	89	100%

Table 6. Lower Extremity Injuries

Tibial Fractures	Open	Closed	Total	Percentage
	12	6	18	64.3%
Foot Injuries			4	14.3%
Femoral Fractures			6	21.4%
			28	100.0%

Table 7. Motorcycle Imports For The Period 1996 To September 2001-10-26

Year	No. Registered
1996	15057
1997	14251
1998	13534
1999	14150
2000	9193
2001 Jan/Sept.	7603
Total	73788

Discussion

Boda Boda Injuries admitted at Mulago Hospital are second to motor vehicle traffic injuries. The commonest motor injuries involve the lower extremity, the majority being open tibial fractures, followed by Head Injuries.

In addition, the motorcyclists tend to over-speed and over load their machines for quick returns. It is because of that recklessness, indiscipline and lack of respect for other road users by the Boda Boda motorcyclists who are mainly youths, are the major cause of these accidents. Hardly any of these young Motorcyclists wear protective gear, hence aggravating the risks of getting severe head injuries and being predisposed.

Businessmen and students were the most injured because of the rush through heavy traffic to get to their businesses and to the school. In Malaysia where motorcycle injuries contribute 60% of all road fatalities[2], improper use of helmets was the most

important cause of the fatal accidents. The majority of our victims were youths. Similar findings have been reported from Victoria[2] where 80.4% of motorcycle injuries occurred in motorcyclists aged 18 - 20 years. This emphasises young age of the motorcyclists as one of the major factors responsible for motorcycle injuries.

Measures that reduce the severity of motorcycle related injuries include helmets, lower limb protection, protective clothing, and air bags. Training for motorcyclists, and alcohol restrictions also reduce the risks of motorcycle related injuries. In this study, the majority of our patients are in the young age group, and it is believed that the majority hadn't undertaken any training lessons before being licensed.

Motorcycling under the influence of alcohol or drugs could not be ruled out among our youth motorcyclists. According to N. Haworth and others[3] the factors contributing to crush occurrence and injury severity related to motorcycle accidents include:

- Being male
- Being young
- Inexperience
- Being unlicensed
- Riding a borrowed motorcycle
- Consumption of alcohol
- Riding during peak hours
- Curves

Slippery or uneven surfaces

Poor motorcycle maintenance

The commonest motorcycle injuries involved the lower extremity, followed by Head injuries and soft tissue injuries (Abrasions, Lacerations and contusion).

Spinal cord injuries are rare, but can be serious if they occur. Among extremity injuries, the majority were below the knee.

The commonest cause of the accidents was collision with motorcycles followed by the impact of landing on the ground and striking roadside objects.

Conclusion

Boda Boda Injuries was a major cause of admissions at Mulago Hospital and was second to motor vehicles crushes. The majority of the injuries involved the lower extremity. Multiple injuries, and head injuries were also common. The severity of these injuries was mostly due to lack of protective gear.

Recommendations

As a safety measure to the motorcyclists the following measures are suggested: -

- Protective gear to include a Helmet, Eye and Face protection, long pants, gloves, boots and a durable long-sleeved jacket.
- Restriction of alcohol consumption before operating a motorcycle.
- Strict enforcement of road laws.
- Headlights to be kept on all the time during motorcycle riding.
- All motorcycle riders' should undertake course before being licensed as Boda Boda cyclists.

The Boda Boda owners should compulsorily provide the passengers on the motorcycles with helmets. Strict laws on the road will go a long way in controlling the Boda Boda Road Traffic related injuries.

References

1. The registrar of Motor vehicles. Uganda Revenue Authority Kampala, Uganda.
2. N. Haworth, J. Ozanne-Smith, B. Fox & I. Brunon, " Motorcycle- related Injuries to children's adolescence. Monash University Accident Research Center. Report 56, 1997.
3. Motorcycle injuries Oklahoma Staff. Department of Health Injury Prevention Service. Source: *www.health.state.ok.us*