Hospital Survey of Boda-Boda Related Accidents in Western Kenya

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Background

• Boda-Boda’s are a form of taxi service which originated between the Kenya-Uganda Border during the 1960’s and 1970’s

• Initially, bicycles were used but motorbikes have become more common

• Very few drivers receive formal training to operate motorbikes

• Boda-Boda related accidents remain a large contributor to morbidity and mortality in Kenya
Objectives

• To determine the most common injury patterns associated with boda-boda accidents

• To examine potential risk factors for the high occurrence of boda-boda accidents. (i.e. alcohol use, illicit drug use,)

• To determine the rates of safety precautions such as helmet use among boda-boda accident victims
Methods

- Participants were selected upon presentation to Siaya District Hospital and Yala Sub-District hospital with injuries related to road traffic accidents.

- Participants were administered a verbal questionnaire in English. Translators were available for any participant who did not speak sufficient English.
Methods

- After conducting a thorough history, participants were visually inspected from head-to-toe for signs of injury
  - Injuries were classified as either soft-tissue injuries or skeletal bone fractures
  - Soft tissue injuries were categorized by location (i.e. head, abdomen, pelvis, upper extremities, etc.)
  - Skeletal fractures were categorized by involved bone (i.e. humerus, tibia, femur)
- Any injury suspicious for fracture or dislocation was recommended for x-ray imaging
- All injuries were appropriately managed and hospital admissions occurred whenever necessary.
Results

- Over a 4 week span, 24 patients ages 6 to 70 were identified as road traffic accident victims at both Siaya District Hospital and Yala Sub-District Hospital.

- Participant Profile
  - 91.6% male (n=22)
  - 8.4% female (n=2)
  - Mean Age = 35.4 Mode= 32
  - 16.6% reported previous boda-boda related injury (n=4)
Results

- Participants
  - 16 were identified as drivers
  - 4 were motorbike passengers
  - 4 were pedestrians
  - 100% presented with soft-tissue injuries (n=24)
  - 45.8% presented with skeletal bone fractures (n=11)

- Vehicles involved in RTA’s
  - 87.5% were motorbikes (n=21)
  - 8.3% were bicycles (n=2)
  - 4.1% were cars (n=1)
Soft Tissue Injuries

Observed Soft Tissue Injuries

- Head
- Neck
- Chest
- Abdomen
- Back
- Pelvis
- Upper Ext
- Lower Ext
Observed Lower Extremity Soft Tissue Injuries
Upper Extremity

Observed Upper Extremity Soft Tissue Injuries

- Shoulder: 0
- Arm: 1
- Elbow: 0
- Forearm: 0
- Wrist: 3
- Hand: 7
Skeletal Bone Fractures

Distribution of Skeletal Bone Fractures (n=11)

tibia 30%
acromion 10%
femur 10%
clavicle 20%
ankle 30%
Potential Risk factors

• **ETOH**
  • 25% of RTA patients reported using alcohol prior to accident (n=6)
  • Of those identified as drivers, 19.0% reported using alcohol prior to accident (n=4)

• **Illicit Drug use**
  • 0% of patients acknowledged any recent drug use

• **License Status**
  • Of those identified as drivers, 71.4% admitted to being unlicensed drivers (n=10)
Safety

- **Helmet Use**
  - 37.5% of drivers reported wearing a helmet at time of accident (n=6)
  - Of the 6 who wore helmets, 5 did not present with any head injuries
  - 0% of passengers reported wearing a helmet at time of accident

- **Passenger Load**
  - 1 passenger (75%, n=18)
  - 2 passengers (12.5%, n=3)
  - 3 Passengers (12.5%, n=3)
Outcomes

- 100% of RTA patients presented on same day of accident
- 33% of RTA patients required admission (n=8)
- No fatalities were observed

Hospital Stay (n=24)

- < 1 day: 62%
- 2 days: 25%
- > 2 days: 13%
Analysis/Discussion

- Males outnumber females for boda-boda related accidents 11:1
- Motorbikes appear to be the predominant source of road traffic accidents (87.5%)
- Soft tissue injuries are twice as common as skeletal bone fractures
- The most common patterns of injury affect lower extremities > upper extremities = head
Analysis/Discussion

- Soft tissue injuries to lower extremities occur more frequently on knees > leg > ankle
- Soft tissue injuries to upper extremity occur more frequently on hands > wrist > arm = forearm
- Skeletal bone fractures occur more frequently with tibia and ankle bones followed by clavicle
- Alcohol may be a contributing factor considering 1 in 5 patients reported using it prior to the accident
- Assuming participants were completely forthcoming, illicit drug use does not appear to be a major contributor to the accidents observed in this study
License status may play a big role as a stunning 71.4% of drivers reported not having one.

Safety practices are minimal as only 37.5% of non-pedestrians wore them at time of accident.

Only 1 out of 6 drivers who reported using a helmet presented with a head injury which clearly indicates the potential for reduced injuries.

The effects of passenger load on the rates of boda-boda accidents is not clearly established due to the lack of more extreme passenger numbers.
Conclusion

- The burden for boda-boda related injuries disproportionately favors men.
- Soft tissue injuries are the most common occurs and can be found most frequently on knees of patient.
- Skeletal bone fractures are more frequent on lower extremities as evidenced by greater involvement of tibia and ankle bones.
- Alcohol may play a role in boda-boda accidents.
- The high rate of unlicensed drivers may play a huge role in the number of boda-boda accidents.
- Helmet use should be encouraged because those who wear them present with less head injuries.
Questions?