

Fact Sheet

Road Traffic Injury in Tanzania: Two Population-Based Studies (v. 1.1, 29 May 2013)

Summary

The Tanzanian government is about to embark on a major rural road improvement programme. This includes aiming to upgrade all 14,600 kilometres of road currently classified as ‘poor’ or ‘non-motorable’ condition, to ‘fair’ or ‘passable’ condition. In this programme, as with any road improvement programme, consideration must be given to the potential impact of increasing road traffic injury (RTI).



Amend, a road safety NGO, designed and executed the research studies and road safety initiatives outlined in this fact sheet in order to increase knowledge in this area, to foster responsible rural road improvement programmes and to guide injury prevention efforts. This research was carried out between May 2012 and March 2013 and is comprised of two separate studies.

Study 1: A Population-Based Community Control Study to Quantify RTIs on Rural Roads and to Assess the Effectiveness of Road Safety Measures at Reducing Injury Rates

Design

This study attempted to survey all individuals living in all households within 200 metres of two low-volume rural roads, to collect baseline data on RTIs. Local communities and users of one of the two roads received an intensive programme of road safety measures tailored using the crash characteristics of the baseline sample. This road is referred to as the ‘intervention site’. Nine months later follow-up sampling was carried out. The other road served as a community control (the ‘control site’) and had the follow-up sampling eight months after baseline data collection. Of note a similar road safety programme was implemented after the follow-up sampling in the control community.

Demographic data was collected on all household members, and comprehensive information about crash characteristics and socioeconomic impact was collected from those individuals who had suffered an RTI in the previous three months.

Results

3,546 individuals were sampled for the baseline and 3,780 for the follow-up, identifying a total of 82 RTIs, equivalent to an incidence of 44.7 RTIs per 1,000 person-years. RTI incidence on rural roads was as high as 55.3 RTIs per 1,000 person-years in one community. In comparison, the overall RTI rate for Great Britain is 3.3 per 1,000 person-years.

Other results from Study 1 include:

- The majority (71%) of crashes that caused an RTI involved a motorcycle, and the majority of victims were male (82%) with an average age of 27.
- Injuries to legs (55%) were most common, followed by head/face (22%).
- Almost a quarter (23%) of RTI victims spent one or more nights in hospital, with the average number of nights spent there being 6.
- RTI incidence at the intervention site increased by a statistically significant amount during the course of the study ($p=0.004$) but not in the community control ($p=0.72$).

Site	Sampled	# of RTIs (within last 3 months)	RTI rate (per 1,000 person-years)
Bago to Talawanda road (Baseline Intervention Site)	2203	20	36.3
Bago to Talawanda road (Follow-up Intervention Site)	2027	28	55.3
Kikaro to Mihuga road (Baseline Control Site)	1343	13	38.7
Kikaro to Mihuga road (Follow-up Control Site)	1753	21	47.9

Table 1: The number of people surveyed at each study location during the data collection, the total number of RTIs reported as being suffered within the three months prior to data collection, and the RTI rate per 100 person-years

Conclusion

Rural roads in Tanzania have a high RTI incidence and unique crash characteristics associated with motorcycle use, a long disability time and predominantly involve working-age males.

Discussion: potential explanations for an increase in RTI incidence at the intervention site after the road safety intervention

- Seasonality in road use – due to the requirements of the study timing, follow-up data had to be collected only eight to nine months after the baseline data rather than the ideal twelve months. Therefore the collection periods were not equivalent and may have been biased by seasonal variation in travel behaviour and climate conditions.
- RTI sensitisation – the programme implementation along the intervention road made people more aware of RTIs than they had previously been, and thus they may have been more likely to recall and report RTIs.
- Increased motorcycle numbers – our parallel study of road use found an increase of over 20% in the number of motorcycles using the road at the intervention site from the time of baseline data collection to the time of follow-up data collection. This may have contributed to the increased RTI rate.

Summary of Road Safety Measures

Quantity	Road Safety Measures at the Intervention Site
100	Motorcycle taxi drivers who received training and licensing
100	Motorcycle taxi drivers who received reflective vests
26	Motorcycle taxi drivers who received motorcycle back supports
100	Motorcycle taxi drivers who received two motorcycle helmets each
2,150	Children who received reflector-enhanced school bags
1,000	Reflective stickers distributed to cyclists and pedestrians
2,150	Children who received road safety education
56	Teachers who received training in road safety education
195	Adults living along the road who received road safety education
300	Calendars including road safety messages distributed among the communities living along the road

Study 2: A Cross-Sectional Study of Road Crashes involving Commercial Motorcycle Taxis ('Boda-Bodas')

Design

A survey of drivers of commercial motorcycle taxis ('*boda-bodas*') operating in Arusha, Kilimanjaro and Pwani regions was undertaken which compiled basic demographic information on all drivers as well as detailed information on any crashes within the previous three months.

Results

341 *boda-boda* drivers were interviewed. Sixty-eight drivers (19%) had been involved in a crash within the last three months, and 54 drivers (16%) had suffered an injury as a result of a crash. These figures equate to a *boda-boda* driver crash rate of 797.7 per 1,000 person-years and an injury rate of 633.4 per 1,000 person-years. In comparison, Great Britain has an overall motorcyclist RTI rate of 17.0 per 1,000 person-years.

Other results from Study 2 include:

- Three drivers were permanently disabled due to their injuries, one due to a head injury and two of whom required a lower extremity amputation.
- The average length of time drivers who had suffered an RTI were unable to work or go about normal activities was 23 days.

- The most commonly injured part of the body was the legs (52%), followed by the arms (32%) and head/face (13%).
- 52% of the incidents that resulted in an injury took place on unpaved roads and the remaining 48% took place on paved roads.
- 83% of those individuals who were injured lost income through inability to work, 83% incurred medical expenses, and 76% spent money for motorcycle repair.
- The average age of all *boda-boda* drivers surveyed was 28, all were male and their average length of work experience was 2.4 years.
- Of the *boda-boda* drivers who had suffered an injury, only 37% had a driving licence.
- Only 26% of *boda-boda* drivers reported the injury-causing incident to the police.

Conclusion

RTI rates among *boda-boda* drivers are more than fourteen times greater than the rates among other members of the communities included in Study 1. RTI prevention efforts may have the most cost-effective impact by focusing on this cohort.

Contacts

In-depth results of this research are available in a full report for the Africa Community Access Programme. For further information, please contact:

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