

Impact of road traffic injuries on household economic welfare: Evidence from Sub-Saharan Africa

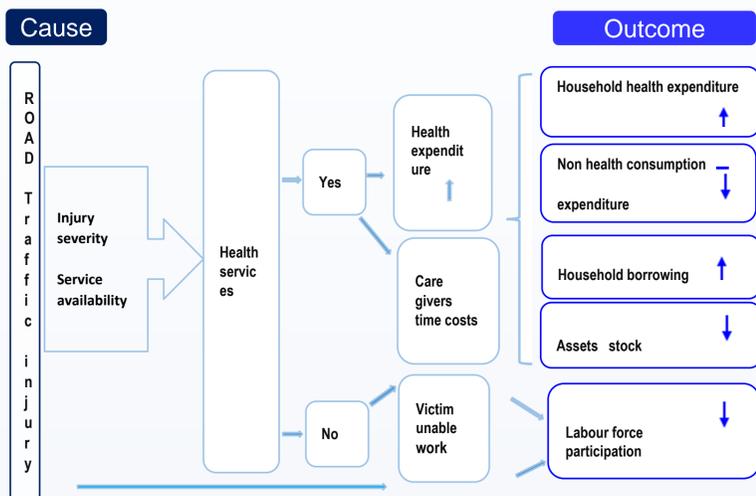
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Introduction

- Road transport plays a key role the smooth functioning of the economy, but transport sector activities can impose negative externalities on other sectors of the economy.
- A leading source of negative externality is the occurrence of road traffic injuries (RTIs).
- RTIs lead to the death of approximately 1.35 million people, and a further 20 to 50 million non-fatal injuries in 2018 [1].
- The burden of RTIs weighs more on low-and middle-income countries (LMICs) whose fatality rate is more than double that of high-income countries.
- At household level, RTIs may affect expenditure patterns, labour supply and overall household economic welfare.
- We examine how RTIs affect households in terms of health and non-health expenditures, wealth, debt and labour force participation.

RTIs and household outcome theory



Data and Methods

Study areas



Dataset

Cross sectional household survey dataset from the Multi-country World Health Surveys (WHS)

Data processing

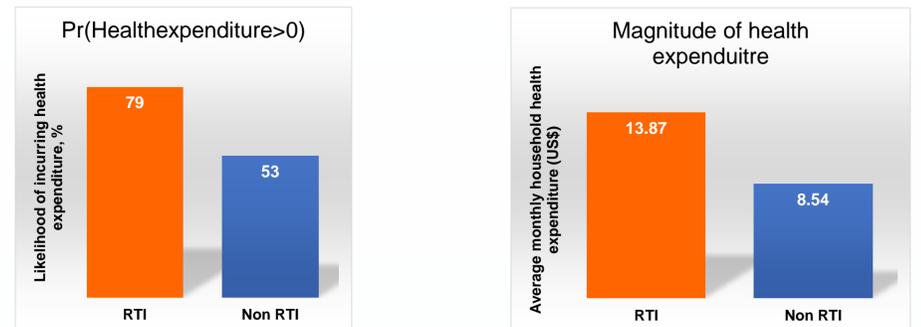
Households reporting RTIs are matched to those who do not report RTI using genetic matching based on individual and household covariates

Regression model

A two-level mixed model with households (first level) nested within countries (second level)

Results

Impact on health expenditure



Impact on indicators house economic welfare

- We find a negative effect of RTI on non-health consumption: RTI affected households spent about 25% less on food, education expenditure, housing and amenities
- RTI-affected households were more likely to borrow funds order to meet health expenses
- Labour force participation does not appear to have a significant association with occurrence of RTI

Discussion

- The higher health expenditure associated with RTIs is consistent with the general literature on how illness and injury impact health expenditure at the household level [2,3].
- The estimated increase in expenditure represents an amount that represent catastrophic levels for lower income households.
- A lower average amount spent on amount spent education, housing and food items could be explained through a substitution effect where households shift resources from purchase of non-health goods in order to consume more health services necessitated by RTI.
- There is a possibility that households faced reduction in consumption of both health and non-health goods due to reduced ability to generate earning in the event that the injured person is an income earner.
- The higher propensity to borrow for health is likely due to the unexpected nature of road incidents which leaves households with unable to earn or reallocate resources.
- The result that RTI does not show the anticipated negative effect on labour force participation could be due to the possibility that RTIs did not compel affected individuals to entirely leave the labour force, but rather reduce on number of hours. Further analysis with granular labor supply dataset would reveal more information.

Conclusion

Road traffic injuries affect a wide range of factors at household level. The findings from this paper show the need to consider effects of RTIs beyond the injured person to a broader household setting when estimating the burden of RTIs.

References

1. World Health Organization, Global status report on road safety 2018: Summary. 2018, World Health Organization.
2. Mchenga, M., G.C. Chirwa, and L.S. Chiwaula, Impoverishing effects of catastrophic health expenditures in Malawi. International journal for equity in health, 2017. 16(1): p. 25
3. Kumar, G.A., et al., Burden of out-of-pocket expenditure for road traffic injuries in urban India. BMC health services research, 2012. 12(1): p. 285.