Motorcycle Injuries in Developing Countries: Defining a Research Agenda

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Presentation Overview

- Gaps in knowledge: burden, determinants and interventions
- Limitations in transferability of knowledge from HIC to LMIC
- Developing a research agenda
- Case study of applying research methods
- The challenge….

What do we NOT know about motorcycle injuries in low-middle income countries?

What are the gaps?

Gaps in Mortality Knowledge

- fewer reliable, valid estimates in low-income countries
  - definitions of an MC injury “death” differ substantially
  - police reports are primary mortality data source but limitations
  - nationally representative data are a scarcity
- limited information on types of motorcycle riders

Gaps in Morbidity/disability Knowledge

- few estimates of morbidity in low-income countries
  - hospital surveillance data not reliably available or nationally representative
  - definitions of severity not comparable
  - limited data on non-hospitalized injuries
- Hardly any information on long-term sequelae (disability)

Gaps in Causal Knowledge

- limited etiological research, particularly on role of motorcyles and environmental factors, undertaken in LMIC
  - some cross-sectional studies
  - few case-control or cohort studies
- almost no studies have calculated population attributable risks

Gaps in Intervention Knowledge

- few intervention studies undertaken in LMIC to study efficacy or effectiveness of interventions
  - some ecological studies
  - Randomized trials and controlled field trials are rare

Gaps in Economic Knowledge

Costs:

- Little reliable information
- Largely aggregate figures

Cost-Effectiveness:

very few studies in low/middle income counties

no comparative data on interventions except for WHO

Why can’t we rely on transfer of knowledge about injuries in HIC to LMIC?

Transferability of research

Direct transferability of research from high- to low-/middle-income countries is limited:

Transferability of research (2)

Direct transferability of research from high- to low- and middle-income countries is limited:

- MC injury patterns and consequently injury risk factor mix varies
- Risk factors may not exist in HIC (or LMIC)
- Behavioral and environmental factors might differ substantively

Transferability of research (3)

Direct transferability of research from high- to low- and middle-income countries is limited:

- Known effective interventions may be costly, may be unacceptable, may be irrelevant
- New interventions need to be developed to address high risk groups and/or risk factors seen only in LMIC
- Funds for research in LMIC are not available currently

A Research Agenda for MC Injuries

Broad Proposal

Research Agenda (1)

- Defining the burden of MC injuries
  - Specifically by type of users
  - Account for non-fatal health outcomes (and not only mortality)
  - Follow up for short and long term disability outcomes
  - Prevalence of risk factors
  - Use of safety equipments

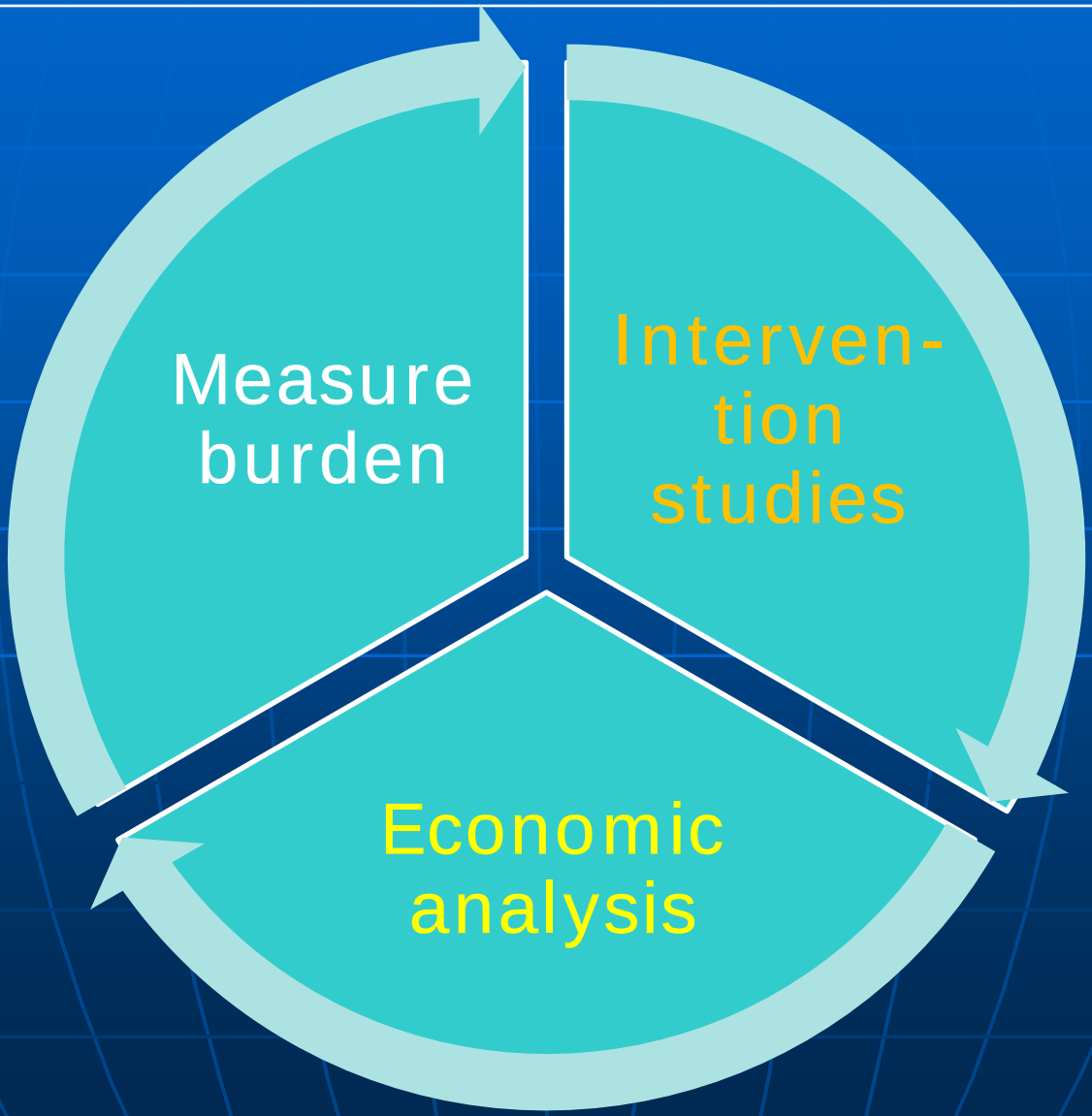
Research Agenda (2)

- Intervention Trials:
  - Critical need to demonstrate effectiveness of specific interventions for MC injuries in LMIC
    - Define program effectiveness as new initiatives are launched
  - Also need to evaluate existing interventions to make sure they work
    - Make sure “programs” are working
    - And avoid unnecessary expenditure of scarce resources

Research Agenda (3)

- Economic analysis:
  - Cost of MC injuries needs to be estimated on an empirical basis
  - Cost effectiveness of interventions need to be calculated
  - Modeling of such estimates to account for future growth in population and motorcycles
  - Impact of economic growth and motorcycle injuries (and vice versa)

MC Injuries – Research Agenda



Implementing a Research Agenda using Multiple Research Methods

Example from Pakistan

Methods (1)

- Quantitative:
  - National Injury Survey of Pakistan 1997-2000
  - Afghan Refugee Injury Survey 2002
  - Secondary data analysis 1995-2000
  - Capture-recapture techniques 2003-2005
  - Injury surveillance in hospitals 2007-2009

National Injury Survey of Pakistan (Ghaffar & Hyder, 2004)

- Nationally representative, household, interview survey for all injuries to all ages (*one of the first such surveys in the developing world*)
- Sample of 28,926 people; 300 injury events
- Overall injury incidence: 41/1000/yr
- Main overall cause: road traffic injuries
- Average work-days lost per person per injury: 17 days

Methods (2)

- Quantitative:
- Qualitative:
  - Attitudes/perceptions/opinions on causation of road traffic injuries
  - In-depth interviews
  - Focus group discussions
  - Stakeholder analysis

Insights from Qualitative Research on RTI (Kobusingye & Hyder, 2007)

- Community based FGD work in Pakistan and Uganda
- Hypothesis that *RTI are "accidents" and nothing can be done* – rejected
- Specific causes suggested for RTI: driver-, road-, enforcement-related
- Specific recommendations for addressing the causes suggested
- Explicit mention of the culture of risk taking and value of life issues

Method (3)

- Quantitative:
- Qualitative:
- Economic:
  - Road safety investments in Pakistan (and Uganda)
  - Cost effectiveness of interventions for road traffic injuries (estimates - modeled)
  - Economic growth and road traffic injuries/fatalities

Road Injuries and Expenditures: A Disequilibrium (Bishai & Hyder, 2003)

- *Estimated* per capita spending (PPP) on road safety:
  - Pakistan: $0.07
  - Uganda: $0.09

- % distribution by *source*:
  - Police/license/inspect: 20%
  - Road/transport: 80%
  - Bilateral aid: 0%

Where do we go from here?

Develop indigenous research agendas and capacity

Final Thoughts…

- Research is necessary to reduce the burden of motorcycle injuries
- Countries like Ghana have to be a smart consumer of research done elsewhere
- Ghana must invest in multi-scetoral research (health, transport, law, education) for preventing motorcycle injuries in the country

Thank you!

- Resources:
  - www.rtirn.net (RTIRN)
  - www.who.int/roadsafety (WHO road safety site)
  - www.jhsph.edu/IIRU (Johns Hopkins International Injury Research Unit)
  - www.globalforumhealth.org (Global Forum for Health Research)