WHO road safety data collection experience

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Objective

• To share the experience of WHO in road safety data collection efforts to support Member States in planning and decision making using reliable data

WHO and health statistics

• WHO plays a key role in collecting, processing, analysing, disseminating and guiding Member States to improve health data on several topics.
  • Intentional and unintentional injuries are included
  • Road traffic injuries is one of the injury topics on which WHO collects and disseminates data
WHO road traffic fatality data sources

- Reported health data Vital Registration (VR)
- Reported data – through GSRRS questionnaire
- Estimate of road traffic fatalities

WHO (Global health estimates – for all causes of death)
GSRRS Questionnaire

GSRRS methodology

- Global and regional coordination
- National data coordination
  - Questionnaire data
  - Legislation data
  - Vehicle standards data
Data sources on road traffic injuries and fatalities

• Data sources
  • Police records
  • Health facility records
  • Vital registration / death certification
  • Combine sources
  • Insurance

• Definitions used
  • Died at scene of crash
  • Died within 24 hours of crash
  • Died within 7 days of crash
  • Died within 30 days of crash
  • Died within a year of crash
  • Unlimited time period following crash

14% of countries combine databases

• Most countries rely on Police data systems only.
• 100 (of 180) countries use a 30-day definition.
• Good Vital Registration data for 85 countries.
• For 78 countries comparative estimates had to be generated using a statistical model.
# Difference between Police and VR data

<table>
<thead>
<tr>
<th>Country</th>
<th>Police data</th>
<th>Vital registration data</th>
<th>Prop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>724</td>
<td>1014</td>
<td>40.1</td>
</tr>
<tr>
<td>Chile</td>
<td>1623</td>
<td>2116</td>
<td>30.4</td>
</tr>
<tr>
<td>Italy</td>
<td>3385</td>
<td>4192</td>
<td>23.8</td>
</tr>
<tr>
<td>Japan</td>
<td>4373</td>
<td>5971</td>
<td>36.5</td>
</tr>
<tr>
<td>Netherland*</td>
<td>570</td>
<td>650</td>
<td>14.03</td>
</tr>
<tr>
<td>Republic Korea</td>
<td>5092</td>
<td>6374</td>
<td>25.2</td>
</tr>
<tr>
<td>Spain*</td>
<td>1680</td>
<td>1915</td>
<td>13.9</td>
</tr>
</tbody>
</table>
Why estimate?

- Underreporting of fatalities in reported data
- Incompleteness of data from countries (e.g. some countries have data only from some geographical regions)
- Significant differences in data from vital registration vs. police and other types of data
- Definitions of road traffic death used by countries differ

Classification of countries

**Group 1:** Countries with death vital registration data

**Group 2:** Countries with other sources of information or causes of death

**Group 3:** Countries with population less than 150,000

**Group 4:** Countries without eligible death registration data
Groups 2 & 3

Group 2
• For India, Iran, Thailand and Viet Nam, data on total deaths by cause were available for a single year or an earlier recent single year or group of years.

Group 3 (13 countries)
• Small countries with populations of less than 150 000 people the deaths reported in the survey were used directly, without adjustment

Independent variables used

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Description</th>
<th>Included in models</th>
</tr>
</thead>
<tbody>
<tr>
<td>ln(GDP)</td>
<td>WHO estimates of Gross Domestic Product (GDP) per capita (international dollars or purchasing power parity dollars, 2011 base)</td>
<td>Models A, B, C</td>
</tr>
<tr>
<td>ln(vehicles per capita)</td>
<td>Total vehicles per 1000 persons</td>
<td>Models A, B, C</td>
</tr>
<tr>
<td>Road density</td>
<td>Total roads (km) per 1000 hectares</td>
<td>Models A, B, C</td>
</tr>
<tr>
<td>National speed limits on rural roads</td>
<td>The maximum national speed limits on rural roads (km/h) from WHO questionnaire</td>
<td>Models A, B, C</td>
</tr>
<tr>
<td>National speed limits on urban roads</td>
<td>The maximum national speed limits on urban roads (km/h) from WHO questionnaire</td>
<td>Models A, B, C</td>
</tr>
<tr>
<td>Health system access</td>
<td>Health system access variable (principal component score based on a set of coverage indicators for each country)</td>
<td>Models A, B, C</td>
</tr>
<tr>
<td>Alcohol apparent consumption</td>
<td>Liters of alcohol (recorded plus unrecorded) per adult aged 15+</td>
<td>Models A, B, C</td>
</tr>
<tr>
<td>Population working</td>
<td>Proportion of population aged 15-64 years</td>
<td>Models A, B, C</td>
</tr>
<tr>
<td>Percentage motorbikes</td>
<td>Per cent of total vehicles that are motorbikes</td>
<td>Model B</td>
</tr>
<tr>
<td>Corruption index</td>
<td>Control of corruption index (units range from about -2.5 to +2.5 with higher values corresponding to better control of corruption)</td>
<td>Model B</td>
</tr>
<tr>
<td>National policies for walking/cycling</td>
<td>Existence of national policies that encourage walking and/or cycling</td>
<td>Model C</td>
</tr>
<tr>
<td>Population</td>
<td>Total population (used as offset in negative binomial regression)</td>
<td>Models A, B, C</td>
</tr>
</tbody>
</table>
Results of estimation

- 2007: 1.1 million deaths (GSRRS1 - 2009)
- 2010: 1.24 million deaths (GSRRS2 – 2013)
- 2013: 1.25 million deaths (GSRRS3 -2015)
- 2015: 1.3 million (GHE -2017)

Conclusion

- This multi-method approach has been used for three reports
- It is continuously being improved
- We welcome your feedback on how to make it better
References

- Global Status Report on Road Safety

- Global Health Estimates

- Data visualization
Thank you for your attention

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