National burden of injuries and violence: A National Household survey in Egypt

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Outline

- Background
- Goals and Objectives
- Data Elements and Consideration
- Methodology
- Key Findings
- Results
- Conclusion
Road traffic deaths per 100 000 population, 2007
Data from 20 countries

Deaths per 100 000 population

Background

- With epidemiological transition and socioeconomic changes, Injuries have emerged as a leading cause of deaths, hospitalizations and disabilities in Egypt.
- Police and hospital based information provides some clues on injury problem, there are major gaps, though:
  - Nationally available data not representative of the whole country- surveillance covers only selected institutions (approx 50%-mainly government institutions).
  - Data from private sector not included.
  - Essential data required for informing policy on primary prevention and cost-effective interventions is not available.
Survey Goal and Objectives

Goal

- Strengthen understanding of injury burden through gathering population based information in order to strengthen national efforts for injury prevention and control

Objectives

- Establish the magnitude of injury burden in terms of mortality, morbidity and impact
- Identify the pattern and causes of injuries at population level
- Delineate major risk factors for selected injuries e.g. Road traffic Injury
- Understand utilisation pattern of services for injury care and management
Survey Methodology

- Population based household survey representative of all Egypt
- The whole survey process was conducted from Dec 08 to Oct 09
- Data was collected in five governorates covering 11,118 households and 47,797 individuals
- 3 stage random sampling method, survey population was identified based on probability proportional to size (House to house survey)
- Validated semi structured questionnaire. Qualitative inputs were provided by both the survey staff and community respondents through focussed group discussions
- Data was analysed using EPI INFO (ver 6.0) package
Survey Geographical Areas

Alexandria

Cairo

Total Population of Egypt: 73 Million
### PPS method for selection of survey population

<table>
<thead>
<tr>
<th>Region</th>
<th>Selected Governorate</th>
<th>Population</th>
<th>% of Egypt Population</th>
<th>Required no. of HH based on PPS</th>
<th>HH Surveyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>Dakahlia</td>
<td>4989997</td>
<td>6.8 %</td>
<td>2058</td>
<td>2190</td>
</tr>
<tr>
<td>South</td>
<td>Assuit</td>
<td>3444967</td>
<td>4.7%</td>
<td>1470</td>
<td>1562</td>
</tr>
<tr>
<td>East</td>
<td>Sharkia</td>
<td>5354041</td>
<td>7.3%</td>
<td>2352</td>
<td>2394</td>
</tr>
<tr>
<td>West</td>
<td>Alexandria</td>
<td>4123869</td>
<td>5.6%</td>
<td>1764</td>
<td>2002</td>
</tr>
<tr>
<td>Central</td>
<td>Cairo</td>
<td>6758581</td>
<td>9.2%</td>
<td>2941</td>
<td>2970</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>10,585</td>
<td></td>
<td>11,118</td>
<td></td>
</tr>
</tbody>
</table>
Distribution of survey population per governorate (%)

- Cairo: 26.7%
- Dakhalia: 19.6%
- Assuit: 18%
- Sharkia: 14%
- Alexendria: 21.5%
Data Elements of the survey tools

- Sociodemographic characteristics of survey population
- Injury mortality
- Injury morbidity
  - Road traffic injuries
  - Fall injuries
  - Burn injuries
  - Poisoning
  - Agricultural injuries
  - Work place injuries
  - Assault / violence
- Injury care
- Injury impact
- Economic impact
Survey Considerations

- The survey enumerated all deaths in the past 3 years and injury deaths were identified using verbal autopsy methods.
- The data was collected from all identified households through a door to door survey approach (head of household).
- Details of deaths were collected from respondent of the survey with cross verification of medical records wherever available.
- Data pooling for the survey period was done with related sectors of police, transport and local health units.
- Pilot study conducted in 100 households to examine the study feasibility.
- Ethical issues considered through a informed consent. Ethical approval was obtained from the national ethical committee.
Results
Key Findings

- An estimated 30,000; hospitalization 3,500,000 persons every year. Highest number of deaths/injuries occurs among men in 15 – 44 year age group.

- 9 out of 10 deaths were unintentional in nature

- Significant variation in injury burden and pattern exist among governorates and is linked to socioeconomic situation, motorization, safety mechanisms and other factors.

- Road Traffic injuries are a leading cause of both deaths and hospitalization in Egypt, (nearly 21,000 deaths every year) especially among men. Among women falls are the leading cause followed by RTIs.

- **Pedestrians and car occupants** account for nearly 80% of deaths and hospitalization within RTIs. Vehicles hitting pedestrians is the commonest pattern of injury.
Key Findings--Contd

- Use of protective devices like helmets, seat belts and child restraints was very low.
- Speed appears to be a major risk factor and a common contributor for collisions.
- Fall injuries are found to be common among women mostly occurring at homes.
- Burn injuries were also found to be a cause of deaths and hospitalization--household products like hot liquids was the major cause.
- Work place injuries were found to be the third leading cause--being hit by mechanical objects was the commonest pattern.
Key Findings--Contd

- Even though intentional injuries like assaults and suicides were frequent (as reported in FGDs), the survey did not capture them in direct interviews with respondents.

- Nearly 20% of injured persons required hospital admissions and one among four of them left for home with varying levels of disabilities.

- The impact of injuries was huge as work status and productivity declined by half (among injured) and unemployment and part-time employment doubled at 6–9 months after injury.

- Majority of injured incur out of pocket expenditure to meet direct and indirect costs of injury
Income Level of Surveyed HH/Month

- Income less than 100 USD: 17%
- Income between 100-200 USD: 11.29%
- Income more than 200 USD: 1.41%
Injury Mortality

19.5% of deaths were due to injuries

- Noncommunicable Diseases: 64.5%
- Communicable Diseases: 19.5%
- Injuries: 16%
Injury Pyramid

For every injury death, nearly 15 injured persons required hospital admission and 48 required emergency care services (ratio of 1:15:50).
Age adjusted Injury death rate/100,000 Population

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;15</td>
<td>3.05</td>
<td>1.52</td>
<td>4.57</td>
</tr>
<tr>
<td>15-44</td>
<td>9.35</td>
<td>3.11</td>
<td>12.46</td>
</tr>
<tr>
<td>45-59</td>
<td>4.33</td>
<td>1.67</td>
<td>6.00</td>
</tr>
<tr>
<td>60+</td>
<td>10.7</td>
<td>5.83</td>
<td>16.53</td>
</tr>
</tbody>
</table>
Injury Deaths as percentage of all deaths

- Alexandria: 18%
- Assuit: 26.5%
- Cairo: 19%
- Dakahlia: 17.2%
- Sharkia: 19.5%
- Total: 19.44%

World Health Organization
Regional Office for the Eastern Mediterranean
External Injury Causes (%)

- RTI: 62.5%
- Fall: 7.1%
- Fall of Object: 8.9%
- Assault: 7.1%
- Others: 3.6%
- Burns: 5.4%
- Work Related: 1.8%
- Drowning: 3.6%
Place of Injury Death

<table>
<thead>
<tr>
<th>Location</th>
<th>Percent of Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accident Spot</td>
<td>32.14</td>
</tr>
<tr>
<td>At Home</td>
<td>19.64</td>
</tr>
<tr>
<td>In Hospital</td>
<td>41.07</td>
</tr>
<tr>
<td>During Transit</td>
<td>7.14</td>
</tr>
</tbody>
</table>
Place of Death (expressed in %age)

<table>
<thead>
<tr>
<th>Location</th>
<th>Accident Spot</th>
<th>During Transit</th>
<th>In Hospital</th>
<th>At Home</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexandria</td>
<td>33.3</td>
<td>22.3</td>
<td>22.3</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>Assuit</td>
<td>44.4</td>
<td>33.3</td>
<td>33.3</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>Cairo</td>
<td>10</td>
<td>60</td>
<td>35.7</td>
<td>21.4</td>
<td>100</td>
</tr>
<tr>
<td>Dakahlia</td>
<td>35.7</td>
<td>7.1</td>
<td>35.7</td>
<td>21.4</td>
<td>100</td>
</tr>
<tr>
<td>Sharkia</td>
<td>35.7</td>
<td>42.9</td>
<td>21.4</td>
<td>19.6</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>32.1</td>
<td>41.1</td>
<td>42.9</td>
<td>19.6</td>
<td>100</td>
</tr>
</tbody>
</table>

- Accident Spot
- During Transit
- In Hospital
- At Home
Injury Incidence rates in all Governorates (per 100,000 population)

- Alexandria: 3059
- Assuit: 729
- Cairo: 1957
- Dakahlia: 1627
- Sharkia: 1356
Age and Sex Distribution of Non-fatal Injuries

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5</td>
<td>8.2</td>
<td>10.7</td>
<td>9.1</td>
</tr>
<tr>
<td>5--14</td>
<td>17.1</td>
<td>17.8</td>
<td>17.3</td>
</tr>
<tr>
<td>15--44</td>
<td>51.4</td>
<td>45.1</td>
<td>49.2</td>
</tr>
<tr>
<td>45--59</td>
<td>15.9</td>
<td>17.1</td>
<td>16.4</td>
</tr>
<tr>
<td>60+</td>
<td>7.3</td>
<td>9</td>
<td>8</td>
</tr>
</tbody>
</table>
Type of Road User Affected (per 100,000 Pop)
Seat Belt Use by Drivers at the time of Crash

- **Yes**: 31.11%
- **No**: 40%
- **Not Known**: 28.89%
Impact of injuries on work status of injured persons

- Full time: 84.19% Work Before injury, 49.42% Work after injury
- Part time: 3.01% Work Before injury, 25.71% Work after injury
- No Jobs: 24.87% Work Before injury, 12.02% Work after injury
Conclusion

- Injury cause a huge burden of mortality and morbidity in Egypt
- Of all the injury causes, RTI outnumbers both mortality and morbidity due to any other cause
- Road safety, home safety and work safety needs to be given greater importance in all existing and future programmes
- The national mechanisms for implementing road safety policies and programmes needs to be strengthened to incorporate enforcement, engineering, emergency care and education to reduce deaths and injuries
- Research should be strengthened to identify focussed risk factors for road crashes, falls, burns and poisoning.
- Similar surveys can be conducted in other EM Member States
Thank you