Circumstances of Injury in Childhood and Adolescence: Current Data and Epidemiology

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in co-operation with the Federal Statistic Board

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- Methods / Data base
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    - fatal injuries
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Aims, Methods & Sources

**Aim:** Assessment of the burden of injuries in German children and adolescents according to age group and sociodemographic status

**Method:** Descriptive epidemiological study

**Sources:**

1. Official statistics
   - Causes of Death Statistics: ICD-10-WHO (XX, V01-Y98)
   - Hospital Diagnosis Statistics: ICD-10-GM (XIX, S00-T98, excl. T80-88)

2. Further Sources
   - IDB (German Injury Data Base): inpatients & outpatients data collected firsthand by doctors in hospitals (2007-2009)
   - Child and Adolescent Health Survey: section “injuries”, based on parent interviews; representative data on injured German children (aged 1-17), 2003-2006, N=2541
Age dynamic of fatal injuries in Germany

- Highest rate of fatal injuries in adolescents
- Continuous decrease in fatal injuries in all age groups, except infants
- The persistently high rate of fatal injuries in infants reflects lack of appropriate preventative measures

Source: Cause of Death Statistic, Federal Statistic Board
### Age-specific dynamics: important for injury prevention

<table>
<thead>
<tr>
<th>Injury category</th>
<th>Age specific dynamic</th>
<th>Year 2008: injury (n) per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Cases per 100,000 age group related</td>
</tr>
<tr>
<td><strong>Fatal injuries due to violence</strong></td>
<td>Highest rate in infants (&lt;1 y)</td>
<td>4</td>
</tr>
<tr>
<td><strong>Fatal unintentional injuries</strong></td>
<td>Highest rate (15-19 ys)</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Highest rate of road traffic injuries (15-19 ys)</td>
<td>10.5</td>
</tr>
<tr>
<td></td>
<td>Highest rate of domestic injuries in children (&lt; 5 yrs)</td>
<td>1.7</td>
</tr>
<tr>
<td><strong>Suicide</strong></td>
<td>Second most common cause of death in (15-19 yrs)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male adolescents 3x more likely to commit suicide than female</td>
<td>6.8</td>
</tr>
<tr>
<td></td>
<td>Highest hospitalisation rate due to poisoning by drugs in female (15-19 ys)</td>
<td>89</td>
</tr>
<tr>
<td><strong>Non fatal injuries</strong></td>
<td>Highest hospitalisation rate in infants, increasing since 1999, but decreasing for all other age groups</td>
<td>3,047</td>
</tr>
<tr>
<td></td>
<td>Highest hospitalisation rate for brain injuries in infants</td>
<td>1,315</td>
</tr>
<tr>
<td></td>
<td>Highest hospitalisation rate of thermal injuries in children (&lt;5 yrs)</td>
<td>110</td>
</tr>
</tbody>
</table>

Example: Age specific development of fatal injuries by intent - infants

- Fatal unintentional injuries: downtrend in infants
- Fatal injuries due to violence remain at a high level. In 2008 rate of injury due to violence almost equal to rate of injury by accident
- Deeper insight into injuries due to violence is necessary to promote preventative measures

Source: Cause of Death Statistic, Federal Statistic Board
IDB - Domestic violence predominantly affects infants - Highest risk in children from disadvantaged families

Injuries due to violence (N=2,186) according to location and age group, 2007-2009, in %

Child injuries due to violence (N= 1,262) related to social status of parents, 2007-2009, in %

Hospitals in Leipzig and Cottbus, injuries in children (<18 ys), 2007-2009 (N=31.107)

Injuries in children (<18 ys) related to social status, 2007-2009 (N= 22.922)

Source: Department of Public Health , Brandenburg
IDB: information on injury mechanisms enabling implementation of specific measures

- Shaken baby syndrome a severe consequence of domestic violence against infants
- Preventative measures developed in co-operation with health insurers, midwives and paediatricians
- Midwives and paediatricians inform parents of newborns that shaking a baby may cause brain damage
- Stressed parents are informed to contact family counselling centers

Results: injuries related to social risk factors

- Road traffic injuries occur more frequently in disadvantaged families (Child and Adolescent Health Survey 2007)
Child and Adolescent Health Survey: close relationship between road traffic accidents in children and social status of parents

Children injured in road traffic accidents (%, N=2,541) related to social status of parents

- **females**
  - High social status: 4.9%
  - Low social status: 10.1%
  - p = 0.47

- **males**
  - High social status: 5.6%
  - Low social status: 11.3%
  - p = 0.019

Source: Child and Adolescent Health Survey, Robert-Koch-Institut 2008

Results: injuries related to social risk factors

- Road traffic injuries occur more frequently in disadvantaged families (Child and Adolescent Health Survey 2007)
- Burns and scalds are 10 (females) to 16 (males) times more frequent in migrant children under 5 years compared to Germans of the same age group (Ellsäßer & Böhmann 2004)
- Scalds occur more frequently in families with => 2 children than in families with one child (Ellsäßer 2002)

Conclusion

- Injuries display an age-specific dynamic
- Recognition of age specific dynamic important for injury prevention
- Strong influence of social factors on the likelihood of road traffic injury and scalds
- IDB (Injury Data Base) collected firsthand by doctors in hospitals, provides detailed information needed to implement age-specific measures
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