INCIDENCE AND RISK FACTORS OF HOMICIDE–SUICIDE IN SWISS HOUSEHOLDS: NATIONAL COHORT STUDY

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Familiendrama von Niederbipp offenbar geklärt
Erbchaftsstreit als Tatmotive im Vordergrund
10. Februar 2011, 18:31


Nach Familien-Drama in Bulle stirbt auch Daisy (6)

Homicide–suicide

> Homicide(s) followed by suicide of perpetrator
> Rare but tragic events
> **Incidence** of 0.2 – 0.5 per 100 000
> ‘Extended suicide’ / ‘dyadic death’
> Mostly **male** perpetrators
> Occur often in intimate **relationships** or in **families**
> Common use of **firearms**
Aims of the study

> **Identify** HS events within Swiss households

> **Extend** forensic and criminological approaches with **population-based** study

> Examine **risk factors** of dying in HS events as a perpetrator or a victim
Swiss National Cohort

- 24,925 suicides
- 1,264 homicides
- 6.8 million individuals
- 2.5 million households
Identification of events

> Search through generation of potential clusters of deaths from mortality records

> Conditions:
   — Two or more violent deaths (homicide(s) AND violent suicide)
   — Events occurred max 14 days apart
   — Same household at Census 1990 or 2000

> 158 deaths in 73 events
Age and gender distribution

- **Males**

- **Females**

**Number of cases**

**Age**

**Perpetrators**

**Victims**

Homicide–suicide in Swiss households
Modelling of risk

- 68 adult male perpetrators
  - population of 2.6 million men
  - 35.9 million person-years of follow-up
- 62 adult female victims
  - population of 2.5 million women
  - 35.1 million person-years of follow-up
- Survival analysis through age adjusted Cox Proportional-Hazards regression
Risk factors

> **Individual** level
  — Age, marital status, nationality, residence status, religion, education, occupation

> **Household** level
  — No. of adults, no. of children, no. of persons per room

> **Area** level
  — Language region, urbanicity

Homicide–suicide in Swiss households
## Risk factors - perpetrators

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>HR</th>
<th>95% CI</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-29</td>
<td>0.50</td>
<td>(0.16 - 1.60)</td>
<td>0.03</td>
</tr>
<tr>
<td>30-39</td>
<td>1.00</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>40-49</td>
<td>1.37</td>
<td>(0.62 - 3.06)</td>
<td></td>
</tr>
<tr>
<td>50-59</td>
<td>1.25</td>
<td>(0.55 - 2.86)</td>
<td></td>
</tr>
<tr>
<td>60-69</td>
<td>1.09</td>
<td>(0.43 - 2.77)</td>
<td></td>
</tr>
<tr>
<td>70-79</td>
<td>2.87</td>
<td>(1.27 - 6.46)</td>
<td></td>
</tr>
<tr>
<td>80+</td>
<td>2.26</td>
<td>(0.71 - 7.22)</td>
<td></td>
</tr>
</tbody>
</table>
# Homicide–suicide in Swiss households

## Risk factors - perpetrators

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>HR</th>
<th>95% CI</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Single</td>
<td>0.43</td>
<td>(0.10 - 1.88)</td>
<td>0.02</td>
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<tr>
<td>Married</td>
<td>1.00</td>
<td>--</td>
<td>0.02</td>
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<tr>
<td>Widowed</td>
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<td>--</td>
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<tr>
<td>Divorced</td>
<td>3.64</td>
<td>(1.56 - 8.49)</td>
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<tr>
<td><strong>Residence status</strong></td>
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<tr>
<td>Swiss</td>
<td>1.00</td>
<td>--</td>
<td>0.03</td>
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<tr>
<td>Permanent residence permit</td>
<td>0.78</td>
<td>(0.35 - 1.73)</td>
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</tr>
<tr>
<td>Annual / seasonal permit</td>
<td>3.95</td>
<td>(1.52 - 10.2)</td>
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</tbody>
</table>
## Risk factors - perpetrators

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>HR</th>
<th>95% CI</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No. of persons</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;1</td>
<td>1.00</td>
<td>--</td>
<td>0.01</td>
</tr>
<tr>
<td>1 - &lt;2</td>
<td>2.00</td>
<td>(1.17 - 3.43)</td>
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<tr>
<td>&gt;=2</td>
<td>4.85</td>
<td>(1.72 - 13.6)</td>
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<tr>
<td><strong>Religion</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Protestants</td>
<td>0.99</td>
<td>(0.56 - 1.74)</td>
<td>0.12</td>
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<tr>
<td>Catholics</td>
<td>1.00</td>
<td>--</td>
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<tr>
<td>No religious affiliation</td>
<td>2.23</td>
<td>(1.14 - 4.36)</td>
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</tr>
<tr>
<td>Other/ unknown</td>
<td>1.40</td>
<td>(0.57 - 3.43)</td>
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</tr>
</tbody>
</table>
Risk factors

> **No association with**
  — Nationality, religion, education, occupation
  — No. of adults, no. of children in household
  — Language region, urbanization

> **Similar pattern of risk among adult female victims**
Summary

- First nation wide cohort study of HS
- High Swiss HS rates despite low homicide rates
- Predominant role of firearms
- Living conditions associated with psychological stress and intimate partner strain contribute to the risk
Thank you!

Questions?