The burden of alcohol-related health harm

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Basis

Many peer-reviewed publications on details in the last three years.
Even though it has been going down, alcohol consumption is high in Europe

ALCOHOL CONSUMPTION IS HIGH IN EUROPE
Regional categorisation with respect to alcohol consumption

Countries within each EU region

Central West and Western Europe:
Austria, Belgium, France, Germany, Ireland, Luxembourg, Netherlands, Switzerland and the United Kingdom

Central-East and Eastern Europe:
Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia

Nordic countries:
Denmark, Finland, Norway and Sweden

Southern Europe:
Cyprus, Greece, Italy, Malta, Portugal and Spain
But differences in regions with respect to levels and trends (2010)

<table>
<thead>
<tr>
<th>Region</th>
<th>Level</th>
<th>Trend</th>
<th>Unrecorded</th>
<th>Patterns Score lower = better</th>
</tr>
</thead>
<tbody>
<tr>
<td>West-Central West</td>
<td>Very high</td>
<td></td>
<td>1.0</td>
<td>1.5</td>
</tr>
<tr>
<td>East-Central East</td>
<td>Very high</td>
<td></td>
<td>2.5</td>
<td>2.9</td>
</tr>
<tr>
<td>Nordic countries</td>
<td>Lowest within EU</td>
<td></td>
<td>1.9</td>
<td>2.8</td>
</tr>
<tr>
<td>South</td>
<td>high</td>
<td></td>
<td>2.0</td>
<td>1.1</td>
</tr>
<tr>
<td>EU plus N, Croatia, CH</td>
<td>high</td>
<td></td>
<td>1.6</td>
<td>1.9</td>
</tr>
</tbody>
</table>
And some country differences
Cancer, liver cirrhosis and injury cover 90% of all net alcohol-attributable deaths

**ALCOHOL-ATTRIBUTABLE HEALTH HARM IS HIGH IN EUROPE**
Currently used model for alcohol comparative risk assessment 2010

Societal Factors
- Drinking culture
- Alcohol Policy
- Drinking environment
- Health care system

Alcohol consumption
- Volume
- Patterns
- Quality

Health outcomes
- Incidence chronic conditions including AUDs
- Incidence acute conditions

Mortality by cause

Population group
- Gender
- Age
- Poverty Marginalization

(individual)
Alcohol-attributable liver cirrhosis, cancer and injury deaths (2010)

Liver cirrhosis, cancer and injury make up more than 90% of deaths from alcohol in Europe
Alcohol-attributable premature mortality (2004/repeated 2010)

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of premature deaths</td>
<td>13.9%</td>
<td>7.7%</td>
<td>11.9%</td>
</tr>
<tr>
<td>95% CI</td>
<td>8.1 – 19.2%</td>
<td>3.1 – 12.1%</td>
<td>6.5 – 16.9%</td>
</tr>
<tr>
<td>Number of</td>
<td>94,500</td>
<td>25,000</td>
<td>119,500</td>
</tr>
<tr>
<td>premature deaths</td>
<td>55,500 – 130,500</td>
<td>10,500 – 40,000</td>
<td>66,000 – 170,500</td>
</tr>
<tr>
<td>Proportion</td>
<td>One in 7</td>
<td>One in 13</td>
<td>One in 8</td>
</tr>
</tbody>
</table>

• Premature deaths are defined as deaths in the age group between 15 and 64 years of age.
The role of heavy drinking and alcohol dependence (age group 15-64)

Heavy drinking accounts for 78% (9.2% of 11.8%) of the net burden and 68% of the total alcohol-attributable burden (9.2% of 13.6%)

Rehm et al Eur Neuropsychopharm 2013
Why could be interventions for heavy drinking including formal treatment potentially successful?

Typical risk curve for alcohol (e.g., liver cirrhosis mortality)

Relative gain in risk for mortality of reducing by three drinks/day for different levels of drinking

Reducing from 14 to 11 drinks per day reduces the mortality risk about 10 times as much as reducing from 3 to 0 drinks/day

All risk curves for alcohol are exponential, either based on average consumption or on BAC.
Alcohol dependence incurs an enormous financial burden on society

Breakdown of costs, in billions, attributable to alcohol-related problems in the EU in 2010

Social costs defined as costs to society, i.e., all costs arising from alcohol consumption that are not borne exclusively by the drinker, such as spending on the drinks

Rehm et al, 2012
Conclusions

• Divergent trends in alcohol consumption in Europe: some good signs, and some bad signs.
• Overall Europe is still the region with the highest alcohol consumption in the world (Eastern Europe higher than EU).
• So overall, harm is still high and will continue to cost more than 1 million premature deaths over the next 10 years, if we do not implement more effective interventions!
• Harm is not restricted to health or to the drinker.
WHAT CAN BE DONE?

Reduce drinking especially in heavy drinkers
Alcohol policy

• WHO Global and European strategies to reduce the harmful use of alcohol

• **WHO best buys:**
  – taxation increases
  – availability restrictions
  – marketing ban

• But there are additional ways to reduce burden: what is we reduce alcohol content by 10% in all beverages?

• Finally, alcohol policy should additionally comprise changes to increase intervention rates for heavy drinkers and for people with alcohol dependence
  – For ethical reasons...
  – ...but, also for public health reasons!
Alcohol dependence in the EU

• 5.4% of men age 18–64 and 1.5% of women in this age category are estimated to be affected by alcohol dependence
• This corresponds to almost 11 million people
• Over all age categories, the prevalence is estimated to be 4.8% for men, 1.3% for women and about 12 million people in the EU
• Current debate whether AD should be best conceptualized as “heavy drinking over time” (Rehm et al., 2013 a,b; Nutt & Rehm, in press; Saunders, 2013; Heather, 2013).
The link to heavy drinking

Table 1: Average alcohol intake in grams per day by number of DSM-IV criteria fulfilled for alcohol dependence (last year), by whether treated in lifetime: from data of the US National Epidemiologic Survey on Alcohol and Related Conditions (NESARC),

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number of criteria of DSM-IV for alcohol dependence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td><strong>for people who have never been in treatment</strong></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>9.1</td>
</tr>
<tr>
<td>Women</td>
<td>4.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6.6</td>
</tr>
<tr>
<td><strong>for people who have been in treatment in their lifetime</strong></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>20.6</td>
</tr>
<tr>
<td>Women</td>
<td>10.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17.5</td>
</tr>
</tbody>
</table>

Rehm et al., 2013b Alc Alc (rejoinder)
Interventions tailored to severity of the alcohol problem (example English guidelines)

A spectrum of responses to alcohol problems

Reduced risk drinking → Abstinence

The probably most typical framework for interventions
Number of deaths avoided over one year in men by treatment for AD in the EU in 2004 by five different treatment modalities (up to 13% of all alcohol-attributable deaths)

<table>
<thead>
<tr>
<th>Treatment Modality</th>
<th>Proportion of people with AD treated 10%</th>
<th>Proportion of people with AD treated 20%</th>
<th>Proportion of people with AD treated 30%</th>
<th>Proportion of people with AD treated 40%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacological treatment</td>
<td>2,459</td>
<td>4,980</td>
<td>7,564</td>
<td>10,040</td>
</tr>
<tr>
<td>MI/CBT</td>
<td>1,020</td>
<td>2,051</td>
<td>3,105</td>
<td>4,160</td>
</tr>
<tr>
<td>MI/CBT higher effectiveness</td>
<td>1,217</td>
<td>2,452</td>
<td>3,698</td>
<td>4,985</td>
</tr>
<tr>
<td>BI hospital 1</td>
<td>995</td>
<td>2,000</td>
<td>3,014</td>
<td>4,051</td>
</tr>
<tr>
<td>BI hospital 2</td>
<td>2,472</td>
<td>4,994</td>
<td>7,563</td>
<td>10,196</td>
</tr>
</tbody>
</table>

Rehm et al., 2013 Eur. Neuropsychopharmacology
Number of deaths avoided over one year in women by treatment for AD in the EU in 2004 by five different treatment modalities (up to 9% of all alcohol-attributable deaths)

<table>
<thead>
<tr>
<th>Proportion of people with AD treated</th>
<th>Pharmacological Treatment</th>
<th>MI/CBT</th>
<th>MI/CBT higher effectiveness</th>
<th>BI hospital</th>
<th>BI hospital 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>416</td>
<td>284</td>
<td>324</td>
<td>266</td>
<td>369</td>
</tr>
<tr>
<td>20%</td>
<td>838</td>
<td>573</td>
<td>651</td>
<td>540</td>
<td>739</td>
</tr>
<tr>
<td>30%</td>
<td>1,269</td>
<td>857</td>
<td>985</td>
<td>813</td>
<td>1,111</td>
</tr>
<tr>
<td>40%</td>
<td>1,704</td>
<td>1,148</td>
<td>1,315</td>
<td>1,080</td>
<td>1,492</td>
</tr>
</tbody>
</table>

Rehm et al., 2013 Eur. Neuropsychopharmacology
Conclusions

Interventions are necessary!

Improving alcohol policy by implementation of more effective interventions is necessary for Europe. There are evidence-based measures to reduce alcohol-attributable harm, many of them among the most cost-effective interventions in health care.
Slides for discussion
1. The concept

a. The concept is that drinking exists within a continuum, with a right hand tail. There are no dichotomies between people who are or who are not heavy drinkers, or between people with AD and without AD.
1. The concept

b. In fact, you need no more than heavy drinking to define alcohol use disorders and alcohol dependence.

US survey data

Number of diagnostic criteria for alcohol dependence

Alcohol consumption g/day

Rehm et al 2013
1. The concept
c. Drinkers move up and down the continuum, with associated risk in parallel. The role of brief advice is to support a shift towards lower risk drinking [from the red line to the green line].
2. The risk

a. One in four of EU citizens aged 15-64 drink heavily

Rehm et al 2012