“Harm Reduction in Norway - the case of snus”

Tobacco Harm Reduction - Diversifikation der Rauchentwöhnungsstrategien
13. Oktober 2021

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NIPH
Norwegian Institute of Public Health
Smoking: 7.5 million deaths annually

Number of smokers: 1.1 billion

Europe:

1.4 million deaths annually
A significant cause of health inequality

Consumption decreasing by 0.9% per year
Prevalence of daily tobacco smokers above 15 years in European countries in 2020

Tobacco Control Strategy Planning Guides
The 'Zero-vision' will be achieved by intensified use of traditional means.

**Punitive**
- Stronger regulations for smoking...
- Higher taxes on cigarettes.....
- Denormalization of smokers.....

**Educational**
- More information...  
  *Cigarettes are bad....*
- Stronger warnings.....
- Intensified campaigns.....
Society has changed............

Stronger regulations...into societies already fairly well regulated

Higher taxes...into markets where cigarettes already appear costly

Denormalize...a group already feeling stigmatized

Intensified campaigns...aimed an audience already inoculated and 'imune'

More information....into populations already well informed
Society has changed........... 

Stronger regulations...into societies already fairly well regulated 

Higher taxes...into markets where cigarettes already appear costly 

Denormalize...a group already feeling stigmatized 

Intensified campaigns...aimed at an audience already inoculated and 'immune' 

More information...into populations already well informed 

Marginal returns from intensifying the traditional weapons of tobacco control
The smokers have changed……

Resistant and reactant
Inoculated and immune
Social class decent
Vulnerable groups
Mental disorders
Lack of coping skills

Smokers possess other characteristics than those we targeted with traditional tools some decades ago........
Smoking associated with low SES – vulnerable populations
Society has changed and the smokers have changed – but the tobacco control policy remains the same.
Das Institut für Suchtforschung (ISFF) lädt Sie herzlich ein zur
4. Fachtagung zum Thema
Tobacco Harm Reduction „Diversifikation der Rauchentwöhnungsstrategien“

Mittwoch, 13. Oktober 2021
10:15–17:15 Uhr (Hybridkonferenz)
The core elements of THR:
- Availability of alternatives to cigarettes
- Risk-proportionate regulation (e.g. taxation)
- Communicate risk difference between products
- Advice smokers to switch product
E-cigarette branded "harmful" as World Health Organisation calls for greater regulation to protect children.

Experts have accused the WHO of failing to understand the "fundamental difference" between a deadly tobacco addiction and being addicted to nicotine.

WHO sounds the alarm on 'harmful' e-cigarettes
<table>
<thead>
<tr>
<th>Topic</th>
<th>Opponents</th>
<th>Proponents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political aim:</td>
<td>Tobacco-free Society</td>
<td>Reduction of smoking related mortality</td>
</tr>
<tr>
<td>Nicotine:</td>
<td>Therapeutic use only</td>
<td>Recreational use will always exist</td>
</tr>
<tr>
<td>Nicotine addiction:</td>
<td>Unacceptable</td>
<td>Acceptable if health risk are low</td>
</tr>
<tr>
<td>Product regulation/taxation:</td>
<td>Designed to deter adolescents</td>
<td>Should motivate smokers to switch</td>
</tr>
<tr>
<td>Risk communication:</td>
<td>‘No nicotine products are risk-free’</td>
<td>Emphasize the risk difference</td>
</tr>
<tr>
<td>Contrasting risk:</td>
<td>Compare to no nicotine use</td>
<td>Compare to smoking</td>
</tr>
<tr>
<td>Risk-reduction potential:</td>
<td>Unknown (no long-term studies)</td>
<td>Huge (based on toxicological/physiological testing)</td>
</tr>
<tr>
<td>Product innovation:</td>
<td>Precaution principle</td>
<td>Novel products may outperform cigarettes</td>
</tr>
<tr>
<td>Nicotine industry:</td>
<td>Can’t be trusted</td>
<td>Willing to cooperate</td>
</tr>
</tbody>
</table>
SNUS

- Available for 200 years
- Use patterns observed since 1985
- Epidemiological studies on health effects conducted

- Oral, low-toxicity smokeless tobacco product
- Moist powder of pasteurized finely ground tobacco leaves
- Pre-baked portions wrapped in cellulose
- Discrete to use, no spitting
When smokers die from smoking-related diseases, they die from…

- **Lung Cancer**: 29%
- **Cardiovascular**: 35%
- **Other cancers**: 8%
- **Diabetes**: 2%
- **Respiratory**: 26%
Smoking-related diseases – association with snus use

- Cardiovascular: 35%
- Lung Cancer: 29%
- Other cancers: 8%
- Diabetes: 2%
- Respiratory: 26%
- Weak/none
- None

- Weak
In 2007:
On toxicological and epidemiological grounds, some of the Swedish smokeless products appear to be associated with the lowest potential for harm to health. ... Therefore, in relation to cigarette smoking, the hazard profile of the lower risk smokeless products is very favorable (161). ... for most of the major health effects of tobacco, smoking is many times more dangerous than smokeless tobacco use (156).

In 2008:
«there is no evidence that STP (smokeless tobacco products) use is associated with any major health hazard that does not also arise from tobacco smoking» (113)

In 2019:
“Using General Snus instead of cigarettes puts you at a lower risk of mouth cancer, heart disease, lung cancer, stroke, emphysema, and chronic bronchitis.”

Safer alternative........Not safe alternative
Probably increases risk of:

- oesophageal and pancreatic cancer
- lethality after myocardial infarction and stroke
- premature births
- type 2 diabetes among high intensity consumers
The changing nicotine market in Norway
Sales volume (weight)

1999/2000
- Cigarettes: 52%
- Snus: 7%
- Roll-your-own: 41%

2 kg/per capita

2019/2020
- Cigarettes: 42%
- Snus: 46%
- RYO: 12%

1 kg/per capita

Source: Customs Norway/The Norwegian Tax Administration
Who makes up the growing segment of snus-users?

Snus 46%
Cigarettes 42%
RYO 12%

Source: Customs Norway/The Norwegian Tax Administration
Who makes up the snus users?

1. Otherwise tobacco-free youth?
   ‘The addition hypothesis’

("The Good Guys")
Who makes up the snus users?

2. Risk prone youth who otherwise would have started to smoke?

*The ‘diversion hypothesis’*
Norway: Daily use of snus and cigarettes 1985-2019
Persons aged 16-24 years
Three yearly moving average

Source: NIPH/Statistics Norway
Tobacco smokers in the age between 15 and 24 years, 2021

Who makes up the snus users?

3. Established smokers?

The 'transition hypothesis'

- Former smokers who quit because of snus?
- Former smokers who would have quit without snus?

Dual users:
  - ...long term/short term?
  - ...trending to snus only?
  - ...trending back to smoking?
Methods used for final smoking cessation by successful quitters* 1997-2019

* quit smoking during the last 10 years

Source: NIPH/Statistics Norway
The majority of snus users are former or current smokers (Lund, Vedøy, Bauld 2016) (Lund I & Lund 2013)

Among current snus users who had quit smoking, 83% reported that snus was used in their final quit attempt (Lund, Vedøy, Bauld 2016)

Snus use associated with higher expectancy of being smoke-free in 5 years (Lund, Vedøy, Bauld 2016)

Snus use associated with higher likelihood of quitting smoking within the first 5 years after snus initiation (Lund I & Christiansen 2019)


Accurate perceptions of risk difference increase the probability to use snus in smoking cessation (Lund 2012)
How to weigh the pros and cons?

What will be the net-effect on public health from tobacco-harm-reduction policy?
The net effect from snus use on public health will depend on:

Never-smokers: What is the excess risk compared to non-use?
   • Absolute risk

Smokers: What is the risk-reduction compared to continued smoking?
   • Relative risk

What is the relationship between smokers and never-smokers in use of the products?
   • User-configuration
Given an anticipated risk difference in relation to cigarettes;

How many of the iii) The Good Guys will have to pick up e-cigarettes in order offset the health gain from each i) Established smoker or each of ii) The Bad Guys who start to vape instead of smoke cigarettes?
Risk-use equilibrium
(See: Kozlowski et al 2001)

<table>
<thead>
<tr>
<th>Harm from e-cigarettes in relation to tobacco cigarettes (%)</th>
<th>1</th>
<th>2</th>
<th>5%</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>100</td>
<td>100</td>
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<td>100</td>
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<tr>
<td>2</td>
<td>1</td>
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<td>50</td>
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<td>5</td>
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### Risk-use equilibrium

<table>
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<th>Number of otherwise smokers who replace cigarettes with e-cigarettes</th>
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Given that e-cigarettes makes up 5% of the risk from smoking:
If one otherwise smoker replace cigarettes with e-cigarettes, then 20 never-smokers will have to start vaping in order to balance out the positive public health effect from the one who switched
Smoking status among current snus users (daily+occasional) Norway, pooled data 2015-2020, aged 15+, N= 9783 (males+females)

- Never smoker: 23%
- Daily smokers: 10%
- Former daily smoker: 27%
- Former occasional smoker: 19%
- Occasional smoker, former daily: 11%
- Occasional smoker, never daily: 10%

Approx. 80% quit by snus

Source: NIPH/Ipsos
Germany

• If all the remaining German smokers (20%) switched completely from cigarettes to snus.....

• ...and the entire adult population in Germany started to use snus.....

• ..the net public health effect would still be positive, provided that snus use makes up approximately 5% of the risks from smoking
Death rates \textit{(age standardized)} per 100,000 attributable to tobacco in 2019

<table>
<thead>
<tr>
<th>Disease</th>
<th>Sweden</th>
<th>EU average</th>
</tr>
</thead>
<tbody>
<tr>
<td>All causes</td>
<td>72</td>
<td>128</td>
</tr>
<tr>
<td>Tracheal, bronchus &amp; lung cancer</td>
<td>14</td>
<td>36</td>
</tr>
<tr>
<td>Ischemic heart disease</td>
<td>18</td>
<td>25</td>
</tr>
<tr>
<td>Stroke</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>COPD</td>
<td>9</td>
<td>17</td>
</tr>
</tbody>
</table>

Compiled from The Global Burden of Disease Study by LM. Ramström (2020)
Death rates (age standardized) per 100,000 attributable to tobacco in 2019

<table>
<thead>
<tr>
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Conclusion

Based on the current knowledge of:
- the moderate risk of snus use relative to non-use (absolute risk)
- the huge risk difference between snus use and smoking (relative risk)
- the overrepresentation of ever smokers relative to never smokers in the snus user population,

availability to snus has produced a net gain to public health
The combined numbers who have

i) quit smoking for snus,

ii) reduced smoking intensity by snus,

iii) picked up snus instead of cigarettes

have outnumbered

iv) snus users who otherwise would have been tobacco-free

Health gains from smoking cessation, smoking reduction and smoking substitution produced by snus, has more than out-weighted the (marginal) health loss in the fraction of never-smokers taking up snus
Implication: should the EU ban on snus be lifted?
Conflict of interest:

- employed by a Government entity answerable to the Ministry of Health and Care Services
- no ties to nicotine industry
- expert witness in 5 litigation cases against the tobacco industry

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