FUME HEALTH GAME –
Using a mobile app to support adolescents’ tobacco-free lifestyle

Heidi Parisod, RN/PHN, PhD
Post doc -researcher, Department of Nursing Science, University of Turku, Finland
Researcher, Nursing Research Foundation (Hotus)
Tobacco is the leading cause of preventable death

- First tobacco experiments typically take place during adolescence
- Nicotine addiction is established more quickly among adolescents than adults

Weekly smoking among 15-year-olds in Europe

Prevalence of weekly smoking in 2010

<table>
<thead>
<tr>
<th>Country</th>
<th>% of weekly smokers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithuania</td>
<td>20%</td>
</tr>
<tr>
<td>Latvia</td>
<td></td>
</tr>
<tr>
<td>Hungary</td>
<td></td>
</tr>
<tr>
<td>Austria</td>
<td></td>
</tr>
<tr>
<td>Czech Republic</td>
<td></td>
</tr>
<tr>
<td>Estonia</td>
<td></td>
</tr>
<tr>
<td>Slovakia</td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td></td>
</tr>
<tr>
<td>Russian Federation</td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td></td>
</tr>
<tr>
<td>Belgium (French)</td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td></td>
</tr>
<tr>
<td>Belgium (Flanders)</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td></td>
</tr>
<tr>
<td>the Netherlands</td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td></td>
</tr>
<tr>
<td>Scotland</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td></td>
</tr>
<tr>
<td>Portugal</td>
<td></td>
</tr>
<tr>
<td>Wales</td>
<td></td>
</tr>
<tr>
<td>England</td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td></td>
</tr>
</tbody>
</table>

(HBSC research group 2019)
Adolescents’ tobacco-use in Finland

- Adolescents’ daily cigarette smoking is decreasing
- In 2017 the percentages of adolescents who smoked daily cigarettes was:
  - 6.9% among 14 to 15-year-old adolescents (8.9% in 2015)
  - 3.4% among 16 to 17-year-old adolescents in upper secondary school (academic track) (5.7% in 2015)
  - 23.2% among 16 to 17-year-old adolescents in vocational school (vocational track) (30.5% in 2015)

(THL 2017)
• Adolescents’ daily use of snus is increasing (except those in upper secondary school)
  • 4.5% of 14 to 15-year-old adolescents used snus in 2017 (4.2% in 2015)
  • 3.7% of 16 to 17-year-old adolescents in upper secondary school (academic track) (3.9% in 2015)
  • 10.3% 16 to 17-year-old adolescents in vocational school (vocational track) (7.8% in 2015)
Already some of the children aged 10 to 11 years have tried tobacco-products at least once

- Smoking cigarettes 3.9%
- Using snus 2.0%
- Using electronic cigarettes 3.2%

(THL 2017)
All the children should have a possibility to tobacco-free life

Tobacco-free lifestyle should be promoted already at an early phase
Examples of tobacco prevention interventions in Finland

- The first printed tobacco preventive materials were provided in 1959
- The first tobacco preventive add campaign targeted to adolescents was launched in 1960
- In the 1980s the content of the materials developed towards a more soft and fresh approach
- In the 1990s digital materials increased (such as CD-ROMs)
- In the 2000 and onwards school-based tobacco-free competitions (SmokeFree Class) were launched, use of online materials
- Today, tobacco as a topic should be addressed at school during classes and meetings with health professionals annually

(Semi 2017; Puuronen 2012)
How should we promote tobacco-free lifestyle among today’s adolescents?
NO! To Smoking - project

- NO! To Smoking project was started in 2013
  - Collaboration of researchers in nursing science and information technology
- The aim of the project was to study today’s adolescents’ needs and expectations regarding tobacco-related health education
  - Focus on support of tobacco-related health literacy → motivation and ability to access, understand and use tobacco-related information
- Further, the aim was to develop and evaluate a digital health game intervention targeted to 10 to 13-year-old early adolescents
Adolescents’ needs and expectations

• Two qualitative studies with Finnish adolescents aged 10 to 16 years (2013-2014)

1. The adolescents (n=122) described that from their point of view:
   • Tobacco as a topic should be approached delicately
   • The focus should be on the adolescents' perspective
   • The positive sides of a tobacco-free life should be highlighted rather than only focusing on the negative consequences of tobacco
   • Health education should be stimulating, intellectually challenging and to offer possibilities for individualization

Parisod 2019
2. Based on focus group interviews with 10-13-year-old early adolescents (n=39)
   • Early adolescents make careful observations of tobacco-use in their daily surroundings
   • Early adolescents have difficulties in interpreting conflicting information regarding tobacco and they need adults’ support in understanding such information

“One of our floorball coaches uses snus. And every now and then he smokes cigarettes. But still, he like…he can like…you know that he can, like, run”
A health game supporting early adolescents’ tobacco-related health literacy?

Figure 1. The overall study design

(Parisod et al. 2017; 2018a)
The Fume game

• A mobile health game that includes five minigames and text-based information sheets

• The purpose of Fume is to
  • provide easily understandable information in a format that appeals to adolescents
  • support understanding of abstract concepts with visual approach
  • support motivation and capacities to use the information in daily life situations by addressing different determinants of tobacco-related health literacy

• Fume is available from mobile stores free of charge in Finnish, Swedish and English
Topics addressed with Fume

- The effects of tobacco to the health and fitness
- The effects of tobacco to the environment
- How to tackle peer pressure
- The costs of tobacco and nicotine addiction
- A quiz with different perspectives

→ These serious and evidence-based topics are approached with a humoristic touch
There are different endings based on the decisions made in the game and player’s performance.
How Fume is played?

• The minigames are played in a random order
• The player has three lives
• The goal of the game is to collect as much scores as possible
• The game gets more and more difficult as the player proceeds in the game
• Playing the game through takes from few minutes to about 10-15 minutes
Fume was tested in 2016 with 10 to 13-year-old early adolescents (cluster randomized trial, n=151)

We tested acceptability, free-time use and preliminary effectiveness of the game
A two-week intervention
Results

• Some background factors:
  • 13,2% did not know what snus is
  • 43,0% mentioned that cigarettes as a topic was not discussed at school during the last school year
  • 58,3% mentioned that snus as a topic was not discussed at school during the last school year
  • 51,7% could not mention any consequences of snus use

Parisod 2019
Use of Fume vs. the website

- The 10- to 13-year-old early adolescents used *Fume* more than the website on their free time ($P \leq 0.001$)

(Parisod et al. 2018a; 2018b)

<table>
<thead>
<tr>
<th></th>
<th>Visits (n)</th>
<th>Separate visit days (n)</th>
<th>Total amount of use (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fume</strong></td>
<td>4</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td><strong>Website</strong></td>
<td>1</td>
<td>1</td>
<td>9</td>
</tr>
</tbody>
</table>

Use of Fume vs. the website (medians)
Interest:
- Fume was found to be more interesting as it provoked more discussions among early adolescents than the website ($P \leq 0.001$)

Preliminary effectiveness:
- The study showed favorable changes in the determinants of tobacco-related health literacy within the Fume group
  - Positive smoking outcome expectations ($P = 0.002$)
  - Negative smoking outcome expectations ($P = 0.02$)
  - Attitudes towards cigarette smoking ($P = 0.01$)

(Parisod et al. 2018a; 2018b)
Based on the results Fume is a potential intervention to support adolescents’ tobacco-related health literacy and tobacco-free lifestyle.

Fume could be utilized for provoking thoughts and discussions among adolescents.

It could be utilized as part of health education for example before classes or meetings with health professionals.
Thank you!

More information: heidi.parisod@utu.fi
Referenses


Parisod 2019


