Narghile Smoking:
A Public Enjoyment, A Regional Threat

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On behalf of AUB’s Tobacco Control and Prevention Group
Narghile: a Resurging Smoking Device

• Practiced extensively for 400 years (Knishkowy, 2005)
• Prevalent in South-West Asia and North Africa (A. Shihadeh et al., 2005)
• Of global nature; used by:
  – 100 million people daily (Maziak et al., 2004)
  – 26.6% of sampled Arab American adolescents
• Used in dormitories, cafes, or restaurants (Knishkowy, 2005)
• Mostly practiced in groups
• Sharp rise in popularity particularly among young people (A. Shihadeh et al., 2005)
Narghile

- Tobacco used in Narghile: 10 to 20 g (Knishkowy, 2005)

- 3 main forms of tobacco:
  - “Mu’essel” or “maasel”: 30% tobacco and 70% honey or molasses
  - “Tumbak” or “ajami”: a pure, dark paste of tobacco
  - “Jurak,” (Indian origin): contains fruits or oils but that may also be treacle and unflavored. (Knishkowy, 2005)
The MENA Region: A Behavioral Concern

• In rural Egypt, 22% of 6762 men reported past or current use (Mohamed et al, 2003)
• In Kuwait, among government employees 57% of males and 69% of women had ever smoked (Memon et al, 2004)
• In Syria, 20% among men and 4.8% among women (Ward et al, 2006)
• About 10–18% of 13–15 year olds use tobacco products other than cigarettes, most likely Narghile (Maziak et al, 2004)
Lebanon: A case in the regional epidemic

Prevalence of Narghile use → quickly increasing:
• In 2001: A survey of students from several Beirut universities reported 21.1% current Narghile use
• In 2002: a survey conducted at the American University of Beirut reported 28.3% current users
• In 2002, 43% of entering students reported ever using Narghile compared to 30% four years earlier
Narghile: Misconceptions

• Smoke passes through the water before the smoker inhales it → the water “filters out” the harmful substances in tobacco smoke (factsheet 28)

• The use of herbs or fruits as flavorings → masks the harshness of the tobacco (factsheet 28)

• Smoking a herbal product appears less hazardous than other forms of smoked tobacco products (factsheet 28)
Narghile: Misconceptions

• In Syria, 30% of sampled university students thought Narghile was less harmful than cigarettes  (Maziak et al, 2004)

• In Egypt, 21% of 206 adult male Narghile users reported that they preferred Narghile use over cigarette smoking because it was less harmful. However, 81–92% of these users knew that Narghile use was associated with lung cancer, asthma, heart disease, and infection transmission  (Maziak et al, 2004)
Narghile Smoking Knowledge among University Students

Harmful effects of Narghile smoking

- Smoking is related to respiratory disease: 88%
- Heart Disease: 68%
- Fetal Problems: 62%
- Cancer of the oral cavity: 63%
- Narghile smoke contains addictive substances: 67%

Chaaya et al, 2004
Social Acceptance of Narghile in the MENA Region

- A behavioral norm, especially for women and girls (Maziak et al, 2004)
- More positively perceived than cigarette smoking, especially for women (Maziak et al, 2004)
- Users, especially women, were particularly enthusiastic about Narghile’s positive aspects: it looks traditional, familiar, social, and attractive (Maziak et al, 2004)
- Home delivery @ $1-2 a piece (Afifi-Soweid, 2005)
## Clues into determinants

<table>
<thead>
<tr>
<th>Parental / Peer attitudes</th>
<th>Cigarettes</th>
<th>Narghile</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is your mom’s attitude of your smoking behavior (disapprove)</td>
<td>66.1%</td>
<td>52.1%</td>
</tr>
<tr>
<td>What is your dad’s attitude of your smoking behavior (disapprove)</td>
<td>71.8%</td>
<td>52.3%</td>
</tr>
<tr>
<td>Do you have friends who encourage you to smoke</td>
<td>19.9%</td>
<td>38.8%</td>
</tr>
<tr>
<td>Do you have friends who encourage you to stop smoking</td>
<td>46%</td>
<td>22%</td>
</tr>
</tbody>
</table>

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Health Concerns: Variable Levels

- Nicotine
- Carbon Monoxide
- Tar and Carcinogenic heavy metals (part of the tar) .. arsenic, chromium, cobalt, lead...
- Depending on:
  - Frequency
  - Size of Narghile
  - Type and amount of tobacco paste used
  - Length of session
    - temperature burning
  - Sharing of Narghile

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Carcinogens (Knishkowy, 2005)

- Session = several hours at a time (Knishkowy, 2005)
- Moisturized smoke = less irritating = deeper breath (Knishkowy, 2005)
- High levels of toxic compounds including carbon monoxide, heavy metals, and cancer-causing chemicals (Knishkowy, 2005)
- Higher concentrations of Carcinogens due to:
  - higher concentrations in the smoke itself
  - the mode of smoking: frequency of puffing, depth of inhalation, and length of smoking session (Knishkowy, 2005)
- High levels of arsenic, chromium, and lead in comparison with smoke from a single cigarette (Knishkowy, 2005)

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## Misconceptions in Numbers

<table>
<thead>
<tr>
<th></th>
<th>Single waterpipe use session</th>
<th>Single cigarette</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tobacco type</strong></td>
<td>ma’assel</td>
<td></td>
</tr>
<tr>
<td><strong>Number of puffs</strong></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td><strong>Puff volume, ml</strong></td>
<td>300</td>
<td></td>
</tr>
<tr>
<td><strong>Tobacco paste consumed, g</strong></td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td><strong>Charcoal consumed, g</strong></td>
<td>5.2</td>
<td></td>
</tr>
<tr>
<td><strong>“Tar”, mg</strong></td>
<td>242</td>
<td>29</td>
</tr>
<tr>
<td><strong>Nicotine, mg</strong></td>
<td>2.25</td>
<td>2.39</td>
</tr>
<tr>
<td><strong>CO, mg</strong></td>
<td>(145)</td>
<td>22.5</td>
</tr>
<tr>
<td><strong>Heavy metals</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arsenic, ng</td>
<td>165</td>
<td>40-120*</td>
</tr>
<tr>
<td>Beryllium, ng</td>
<td>65</td>
<td>300*</td>
</tr>
<tr>
<td>Nickel, ng</td>
<td>990</td>
<td>0-600*</td>
</tr>
<tr>
<td>Cobalt, ng</td>
<td>70</td>
<td>0.13-0.2*</td>
</tr>
<tr>
<td>Chromium, ng</td>
<td>1340</td>
<td>4-70*</td>
</tr>
<tr>
<td>Lead, ng</td>
<td>6870</td>
<td>34-85*</td>
</tr>
</tbody>
</table>

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Short Term Health Effects

A 45 minutes of Narghile use (factsheet 28)

• Increase expired air carbon monoxide, plasma nicotine and heart rate

• Carbon Monoxide doubles and Nicotine exposure triples, with near equivalent effects on cardiovascular response relative to a single cigarette

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Longer Term Health Effects

In addition to increased risks to Cancer and CVDs:

• Respiratory disorders
  – increased blood carboxyhemoglobin levels
  – reduced ventilatory capacity
  – obstructive airway disease

• Mouth and gum disease
  – In Saudi Arabia the relative risk for periodontal
disease increased by 5-fold in Narghile smokers
  compared to non-smokers

• Transmission of communicable diseases, including
tuberculosis and hepatitis

(factsheet 28) (Maziak et al, 2004)
Secondhand smoke  (factsheet 28)

• Serious risk to the health of non-smokers due to:
  – Tobacco smoke exhaled by the smoker
  – Smoke from the fuel used to heat the pipe
• Children are particularly vulnerable to the effects of passive smoking
• Increase risk of ear and upper respiratory infection, asthma, and sudden infant death syndrome
Public Policy: The way forward

• Narghile is harmful, the evidence is mounting
• Work to change cultural norms and attitudes
  – Need to watch cig to narghile converters
• Limit its spread through a combination of education and legal measures
• Impose laws and regulations to ban or restrict narghile smoking in public places
• Build on the cigarette smoking control momentum

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Thank you