Searching for the Hard-Core Smoker in U.S. Population-Based Surveys

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Hardening the Target: Are Smokers Less Likely to Quit Now Than in the Past?
Symposium
8th Annual Meeting of the Society for Research on Nicotine and Tobacco
Savannah, Georgia
February 20, 2002
Tobacco Control Model of Nicotine Addiction

Agent

Tobacco Products

Environment
Social, Cultural, Political, Economic, Media, Historical

Vector
Tobacco Industry; Other Users

Host
Smoker/Chewer/User
Incidental Host
Involuntary Smoker

Adapted from: Orleans & Slade, 1993
Russell’s Motivation/Dependence Model of Quitting

Source: Progress in Smoking Cessation; Schwartz JL (ed); ACS/WHO, 1978
Optimal Methodologies

- Serial cross sectional AND rolling cohorts
- National and state-specific
- Measuring
  - Tobacco use behaviors
  - Dependence
  - Motivation
  - Co-Morbidities
  - Efficacy, stress, coping skills
  - Appropriate biomarkers
Current Surveys

- National Health Interview Survey
- Current Population Survey NCI Tobacco Use Supplements
- Monitoring the Future Survey
- National Household Survey on Drug Abuse
Current Measures

• Smoking prevalence
• Cigarettes smoked each day
• Percent of smokers who smoke on some days
• Prevalence of cessation (quit ratio)
• Indicators of dependence
• Binge drinking
• Marijuana use
• Interest in quitting
• Selected demographics
Outline of Today’s Presentation

• Educational profile of smokers
• National trends in smoking, cigarettes per day, and quitting
• Indicators of dependence
• State-specific analyses
• Trends in current binge drinking and marijuana use across smoking status
• Interest in quitting
<table>
<thead>
<tr>
<th>Years of Education by Cigarette Smoking Status</th>
<th>United States, Ages 25+ Years, 1970 and 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;8</td>
</tr>
<tr>
<td><strong>Current</strong></td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>23.5</td>
</tr>
<tr>
<td>2000</td>
<td>6.2</td>
</tr>
<tr>
<td><strong>1970/2000</strong></td>
<td>3.8</td>
</tr>
<tr>
<td><strong>Former</strong></td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>24.2</td>
</tr>
<tr>
<td>2000</td>
<td>7.2</td>
</tr>
<tr>
<td><strong>1970/2000</strong></td>
<td>3.4</td>
</tr>
<tr>
<td><strong>Never</strong></td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>30.9</td>
</tr>
<tr>
<td>2000</td>
<td>7.2</td>
</tr>
<tr>
<td><strong>1970/2000</strong></td>
<td>4.3</td>
</tr>
</tbody>
</table>

Source: 1970 and 2000 National Health Interview Surveys, National Center for Health Statistics
Trends in cigarette smoking* among adults aged ≥18 years, by sex - United States, 1955-2000

*Before 1992, current smokers were defined as persons who reported having smoked ≥100 cigarettes and who currently smoked. Since 1992, current smokers were defined as persons who reported having smoked ≥100 cigarettes during their lifetime and who reported now smoking every day day or some days.

Heavy Cigarette Smoking* Among Adults Aged 18+ by Gender – United States, 1974-2000

Source: NHS, 1974-2000

*Smoking 25+ cigarettes per day
Percentage of Ever Smokers* Who Have Quit, Adults Aged ≥ 18 Years, by Sex—United States, 1965 - 2000

Source: National Health Interview Surveys, 1965-2000
Centers for Disease Control and Prevention: National Center for Health Statistics and Office on Smoking and Health.

*Ever-smoked ≥100 cigarettes,
+Also known as the quit ratio. Note: estimates since 1992 incorporate same-day smoking.
Trends in cigarette smoking* by age -
United States, 1965-2000

*Before 1992, current smokers were defined as persons who reported having smoked ≥100 cigarettes and who currently smoked. Since 1992, current smokers were defined as persons who reported having smoked ≥100 cigarettes during their lifetime and who reported now smoking every day or some days.

Source: various National Health Interview Surveys from 1965 - 2000, National Center for Health Statistics
Heavy Cigarette Smoking* Among Adults, by Age – United States, 1974 -2000

Source: NHS, 1974-2000

*Smoking 25+ cigarettes per day

Source: National Health Interview Surveys, 1966 -2000
*Ever-smoked 100 + Cigarettes
*Also known as the “quit ratio”, estimates since 1992 incorporates same-day smoking
Trends in cigarette smoking* among adults aged \( \geq 25 \) years, by education-
United States, 1965-2000

*Before 1992, current smokers were defined as persons who reported having smoked \( \geq 100 \) cigarettes and who currently smoked. Since 1992, current smokers were defined as persons who reported having smoked \( \geq 100 \) cigarettes during their lifetime and who reported now smoking every day or some days.

Source: various National Health Interview Surveys from 1965 - 2000, National Center for Health Statistics
Heavy Cigarette Smoking* Among Adults Aged 25+ by Education – United States, 1974 -2000

Source: NHS, 1974-2000

*Smoking 25+ cigarettes per day

Source: National Health Interview Surveys, 1966 -2000

*Ever-smoked 100 + Cigarettes

*Also known as the “quit ratio”, estimates since 1992 incorporates same-day smoking
Trends in Cigarette Smoking Anytime in the Past 30 days by Grade in School – United States, 1975-2001

Source: Institute for Social Research, University of Michigan, Monitoring the Future Surveys

Source: Institute for Social Research, University of Michigan, Monitoring the Future Surveys
Indicators of Dependence

• 1985 – 1994 National Household Survey on Drug Abuse items
• Three indicators (assessed for previous 12 months):
  – Felt dependent on cigarettes
  – Needed more cigarettes to get the same effect
  – Felt sick when cut down on cigarettes
Any Indicator of Dependence – Multiple Logistic Regression Analyses

<table>
<thead>
<tr>
<th>Cigarettes per Day:</th>
<th>OR</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;25</td>
<td>3.1</td>
<td>2.5</td>
<td>3.9</td>
</tr>
<tr>
<td>16-25</td>
<td>2.6</td>
<td>2.2</td>
<td>3.0</td>
</tr>
<tr>
<td>&lt; 16</td>
<td>1.0</td>
<td>(Referent)</td>
<td></td>
</tr>
</tbody>
</table>

- Year

<table>
<thead>
<tr>
<th>Year</th>
<th>OR</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>1.4</td>
<td>1.03</td>
<td>1.9</td>
</tr>
<tr>
<td>1990</td>
<td>1.3</td>
<td>1.09</td>
<td>1.6</td>
</tr>
<tr>
<td>1985</td>
<td>1.0</td>
<td>(Referent)</td>
<td></td>
</tr>
</tbody>
</table>

* Controlling for age, sex, race/ethnicity, and education
Some Day Smoking among Current Smokers by Current Smoking Prevalence – 50 States and D.C., 1992-1993

Note: among persons aged 25+ years; all estimates are age adjusted

$r^2 = 0.259$
$\beta = -0.617$
P < 0.001
N = 51
Cigarettes Smoked per Day by Current Smoking Prevalence in 50 states and D.C., 1992-1993

Note: among persons aged 25+ years; all estimates are age-adjusted
Some Day Smoking among Current Smokers by Current Smoking Prevalence in 50 States and D.C., 1998-1999


$r^2 = 0.363$
$\beta = -0.844$
$P < 0.001$
$N = 51$
Cigarettes Smoked per Day by Current Smoking Prevalence in 50 States and D.C. -- 1998-1999


$\text{r}^2 = 0.435$

$\beta = -0.416$

$P < 0.001$

$N = 51$


Note: among persons aged 25+ years; estimates are age-adjusted


* Among Current Smokers

Note: among persons aged 25+ years; estimates are age-adjusted

Source: Institute for Social Research, University of Michigan, Monitoring the Future Surveys

Source: Institute for Social Research, University of Michigan, Monitoring the Future Surveys

Source: SAMHSA – National Household Survey on Drug Abuse

Source: SAMHSA – National Household Survey on Drug Abuse
Percent of Current Smokers Who Want to Quit by Age and Number of Previous Quit Attempts – United States, 2000

Source: National Center for Health Statistics, NHIS 2000 (with NCI Cancer Supplement)
Summary

- Trend analyses (national and state) of cigarettes per day and some-day smoking do not indicate hardening.
- Preliminary analyses suggest slight increase in indicators of addiction from 1985-1994.
- Trend analyses of binge drinking and marijuana use not conclusive – perhaps increased marijuana use in adult smokers, relative to nonsmokers.
- Interest in quitting is high. Less interest seen among older people and people who haven’t tried to quit in the past.
- Improved surveillance is needed to properly address this question.