

# Use of Evidence-Based Cessation Treatments among Young Adult Smokers in the United States

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## INTRODUCTION

In past years the smoking prevalence of young adults (aged 18-24) was lower than that of adults aged 25 to 44 years, but this trend has recently begun to reverse.

Research indicates that compared to older smokers, young adult smokers:

- have a lower quit ratio
- are more likely to relapse
- are less likely to achieve long-term abstinence
- are least likely to use an assisted cessation method

Evidence-based treatments improve smoking cessation among young adult smokers. A recent study of telephone counseling reported their highest success rates among young adults who received both telephone counseling and pharmacotherapy.

Findings from two recent national surveys indicate that although young adult smokers are interested in quitting low utilization of treatment persists.

The current study uses data from the 2005 National Health Interview Survey to compare directly the use of smoking cessation treatments between young adult smokers (aged 18-24) and the rest of the adult smoking population.

## METHODS

Data come from the 2005 National Health Interview Survey (NHIS) core and cancer control supplement:

- an annual multi-purpose health survey that uses a multistage sample designed to represent the civilian noninstitutionalized population of the United States.

Adults were sampled within families that were sampled within households.

The interviewed adult sample for 2005 consisted of 31,428 persons 18 years of age and older.

The core survey includes questions on:

- height and weight
- physical activity
- tobacco use
- mental health status
- insurance status
- alcohol use
- demographics (gender, age, education, employment, race, ethnicity)

The cancer control supplement survey includes questions about:

- quit attempts
- use of tobacco cessation treatments
- motivation to quit
- health care advice

For a complete description of the survey go to: [www.cdc.gov/nchs/nhis.htm](http://www.cdc.gov/nchs/nhis.htm)

## Study Sample

Among the total sample (N=31,428), 13,285 (42%) reported smoking at least 100 cigarettes in their lifetime, and 6,511 (21%) reported current smoking. The current smokers are the analytic sample for this paper.

## Data Analyses

Analyses were weighted to account for differential sampling probabilities and non-response rates. Continuous measures were compared using t-tests; logistic regression was used for odds ratios and confidence intervals. Multiple logistic regression was used to identify correlates of treatment use.

## REPORTED CURRENT SMOKERS

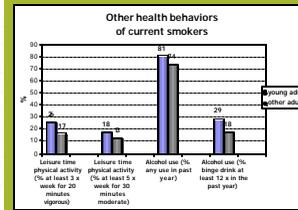
N=6,511

Selected demographic, other health behaviors, and health status characteristics of the smokers

| Variable   | 18-24 yrs<br>n=759 | ≥ 25 yrs<br>n=5,752 | OR<br>95% CI <sup>1</sup> |
|--|--------------------|---------------------|---------------------------|
| <b>Demographics</b>  |                    |                     |                           |
| Race   | %                  | %                   |                           |
| • White non-Hispanic   | 73                 | 75                  | 0.74-1.13                 |
| • African American non-Hispanic  | 19                 | 12                  | 0.92 <sup>2</sup>         |
| • Hispanic/Latino  | 3                  | 2                   |                           |
| • Asian non-Hispanic   | 2                  | 2                   |                           |
| • Other  |                    |                     |                           |
| Gender: female   | 43                 | 46                  | 0.89                      |
| Employment: full-time  | 53                 | 61                  | 0.75-1.07                 |
| Education attainment   |                    |                     |                           |
| • < H.S. graduate  | 25                 | 20                  | 0.79 <sup>2</sup>         |
| • H.S. graduate  | 39                 | 38                  | 0.70-0.89                 |
| • Some college   | 31                 | 29                  |                           |
| • College graduate   | 5                  | 13                  |                           |
| <b>Other health behaviors</b>  |                    |                     |                           |
| Leisure time physical activity (% at least 3 x week for 20 minutes vigorous) | 26                 | 17                  | 1.78                      |
|  |                    |                     | 1.38-2.31                 |
| Leisure time physical activity (% at least 5 x week for 30 minutes moderate) | 18                 | 13                  | 1.48                      |
|  |                    |                     | 1.15-1.90                 |
| Alcohol use (% any use in past yr)   | 81                 | 74                  | 1.53                      |
|  |                    |                     | 1.21-1.92                 |
| Alcohol use (% binge drink at least 12 x in past yr)                         | 29                 | 18                  | 1.89                      |
|  |                    |                     | 1.52-2.34                 |
| Health Status (BMI) (BMI, calculated)  | 24.8               | 27.6                | -2.20 <sup>2</sup>        |
|  |                    |                     | -1.69                     |
| Insurance coverage (% of yes)  | 93                 | 76                  | 0.46                      |
|  |                    |                     | 0.38-0.55                 |
| Serious psychological distress during the past 30 days                       | 5                  | 6                   | 0.56-1.18                 |

Compared to other smokers, young adult smokers:

- Report higher rates of binge drinking.
- Have lower body mass index (BMI).
- Are less likely to report insurance coverage.



## Smoking history, motivation to quit, and health care advice among current smokers

| Variable   | 18-24 yrs<br>n=759 | ≥ 25 yrs<br>n=5,572 | OR<br>95% CI <sup>1</sup> |
|--|--------------------|---------------------|---------------------------|
| Age began smoking (mean)   | 16.1               | 18.6                | -1.83 <sup>2</sup>        |
| Amount smoked (mean number of cigarettes per day)  | 11.0               | 15.1                | -4.06 <sup>2</sup>        |
|  |                    |                     | -5.28 - -2.84             |
| Serious quit attempt past year (% quit for at least 1 day because trying)                | 49                 | 41                  | 1.33                      |
|  |                    |                     | 1.09-1.64                 |
| Want to completely quit smoking (1-5)  | 72                 | 69                  | 1.15                      |
|  |                    |                     | 0.93-1.43                 |
| Visited a doctor or dentist in the past 12 months  | 74                 | 81                  | 0.67                      |
|  |                    |                     | 0.52-0.86                 |
| Asked about smoking by health professional (among those who visited MD in the past year) | 58                 | 67                  | 0.67                      |
|  |                    |                     | 0.54-0.82                 |
| Physician knew about smoking (among those who did not ask about smoking)                 | 26                 | 45                  | 0.44                      |
|  |                    |                     | 0.30-0.65                 |
| Advised to quit by health professional (among those who visited MD in the past year)     | 49                 | 60                  | 0.64                      |
|  |                    |                     | 0.52-0.77                 |

Compared to other adult smokers, young adult smokers:

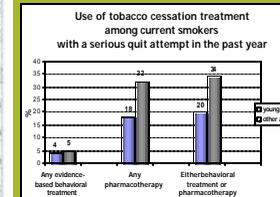
- Are more likely to report a serious quit attempt in the past year.
- Are less likely to report being asked about their smoking by a health professional.
- Are less likely to report being advised to quit by a health professional in the past year.

## REPORTED SERIOUS QUIT ATTEMPTS IN THE PAST YEAR

N=2,747

Use of tobacco cessation treatment among current smokers with a serious quit attempt in the past year

| Treatment use among serious quit attempters        | 18-24 yrs<br>N=387 | ≥ 25 yrs<br>N=2,360 | OR<br>95% CI |
|--|--------------------|---------------------|--------------|
| <b>Behavioral Treatment</b>                        |                    |                     |              |
| Telephone quit line                                | 1                  | 2                   | 0.48         |
|  |                    |                     | 0.15-1.50    |
| Stop smoking clinic, class, or group               | 2                  | 2                   | 1.04         |
|  |                    |                     | 0.43-2.55    |
| One-on-one counseling                              | 1                  | 2                   | 0.63         |
|  |                    |                     | 0.21-1.91    |
| Any evidence-based behavioral treatment (computed) | 4                  | 5                   | 0.81         |
|  |                    |                     | 0.42-1.56    |
| <b>Pharmacological Treatment</b>                   |                    |                     |              |
| Nicotine gum                                       | 6                  | 13                  | 0.43         |
|  |                    |                     | 0.25-0.72    |
| Nicotine patch                                     | 12                 | 20                  | 0.56         |
|  |                    |                     | 0.39-0.82    |
| Other nicotine replacement products                | 2                  | 6                   | 0.38         |
|  |                    |                     | 0.15-0.92    |
| Zyban, Bupropion, or Wellbutrin                    | 3                  | 8                   | 0.63         |
|  |                    |                     | 0.12-0.74    |
| Any pharmacotherapy (computed)                     | 18                 | 32                  | 0.45         |
|  |                    |                     | 0.32-0.62    |
| Any behavioral treatment or pharmacotherapy        | 20                 | 34                  | 0.45         |
|  |                    |                     | 0.32-0.62    |
| Both behavioral & pharmacotherapy (computed)       | 2                  | 4                   | 0.55         |
|  |                    |                     | 0.23-1.31    |
| <b>Other Treatment</b>                             |                    |                     |              |
| Support from friends or family                     | 34                 | 27                  | 1.41         |
|  |                    |                     | 1.06-1.88    |
| Internet or Web                                    | 4                  | 3                   | 1.27         |
|  |                    |                     | 0.59-2.70    |
| Books, pamphlets, videos, other materials          | 5                  | 7                   | 0.70         |
|  |                    |                     | 0.41-1.20    |
| Acupuncture or hypnosis                            | 0                  | 3                   | 0.06         |
|  |                    |                     | 0.01-0.45    |



## Correlates of pharmacotherapy use among current smokers who made a serious quit attempt in the past year

| Variable   | OR<br>95% CI | OR<br>95% CI | Sign. <sup>2</sup> |
|--|--------------|--------------|--------------------|
| Female vs. Male                                  | 1.55-14.24   | 0.98-1.16    |                    |
|  | N=387        | N=2,360      |                    |
| White vs. Other                                  | 0.45-1.90    | 1.10-1.76    |                    |
|  | 0.43         | 1.62         | ***                |
|  | 0.21-0.87    | 1.26-2.07    |                    |
| High school graduate vs. Less than high school   | 4.70         | 0.83         | **                 |
| Some college vs. Less than high school           | 1.55-14.24   | 0.98-1.16    |                    |
|  | 4.87         | 1.04         | **                 |
| College graduate vs. Less than high school       | 1.61-14.74   | 0.77-1.42    | **                 |
|  | 5.57         | 1.50         |                    |
| Insurance vs. None                               | 1.09-28.57   | 0.98-2.30    |                    |
|  | 1.57         | 1.90         |                    |
|  | 0.78-3.16    | 1.10-2.06    |                    |
| Health care visit vs. None                       | 1.02         | 1.02         |                    |
|  | 0.33-3.20    | 0.68-1.53    |                    |
| Advised to quit by health care provider vs. None | 3.14         | 1.88         |                    |
|  | 1.50-6.54    | 1.45-2.42    |                    |
| 10 cigarette difference <sup>1</sup>             | 2.90         | 1.46         |                    |
|  | 1.22-3.27    | 1.28-1.66    |                    |

Young adults with higher educational attainment were more likely to use pharmacotherapy.

Being advised by a health care provider to quit had an equivalent and positive association with the use of pharmacotherapy in both age groups.

Heavier smokers were more likely to seek treatment in both age groups.

## DISCUSSION

This is the first report from the 2005 National Health Interview Survey to examine use of evidence-based smoking cessation treatment by young adults ages 18-24 and to compare young adult treatment use to the remaining population of adult smokers.

- There was little use of evidence-based behavioral treatment by all smokers.
- Compared to other adult smokers, young adults were less likely to use all forms of pharmacotherapy.
  - Approximately one out of five young adult smokers attempting to quit indicated that they used some form of pharmacotherapy, compared to one out of three older smokers.
- For all smokers, use of pharmacotherapy was reported more often by those who reported receiving advice to quit from a health care provider during the past year and among heavier smokers.
- For both age groups the most commonly used treatment was the nicotine patch, followed by nicotine gum. This likely reflects the availability of both of these products over the counter.

Why might young adult smokers be less likely to report using pharmacotherapy treatments to aid their cessation attempts?

- To the extent that smokers seek such treatment as a "last resort" after multiple failed unaided quit attempts we would expect to see less use among young adults who are earlier in their smoking career.
- Young adult smokers were less likely to receive advice to quit from health care professionals who could either prescribe medications or refer them to products available over the counter.
- More young adults may have false beliefs about the effectiveness or potential harmful effects of effective treatments.
- Access to pharmacotherapy may also be limited for young adults who are less likely to have health insurance that could cover their costs.

Findings from this study need to be considered in the context of the limitations.

- This is cross-sectional survey that relies on retrospective, self-reported data.
- Treatment use was only assessed for those who reported achieving at least 24 hour abstinence in the past year.
- The survey did not assess the number of serious quit attempts, thus we are not able to link treatment use to any specific quit attempt during the past year, nor can we know how many quit attempts involved treatment use.

The 2005 National Health Interview Survey contributes to a better understanding of treatment use and preferences among young adults. Tobacco cessation among young adult smokers is an understudied area. The field is ripe for studies to assess ways of increasing demand for evidence-based treatment among young adult smokers and for rigorous evaluations of treatment effectiveness in this key target population.

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