

Toward the 1990 Objectives for Smoking: Measuring the Progress with 1985 NHIS Data

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Synopsis

The Health Promotion and Disease Prevention component of the 1985 National Health Interview

Survey allowed us to measure the progress made toward achieving the 1990 objectives for the nation concerning cigarette smoking. The first smoking-related objective, namely, to reduce to below 25 percent the proportion of the U.S. population who smoke, has not been achieved.

Today 31 percent of the population smoke. More than 85 percent are aware of the special risk of developing and worsening chronic obstructive lung disease, chronic bronchitis, and emphysema among smokers. More than 90 percent are aware that smoking is a major cause of lung cancer; however, awareness of the risk of laryngeal, esophageal, bladder, and other kinds of cancer from smoking is not so great. More than 85 percent are aware that cigarette smoking is one of the major risk factors for heart disease. In general, then, the 1990 objectives concerning the population's knowledge of the health consequences of cigarette smoking have been met.

CIGARETTE SMOKING is the number one preventable cause of death and disability in the United States. The reduction of cigarette smoking is one of the 15 priority areas of the 1990 objectives for the nation (1).

Data from the Health Promotion and Disease Prevention component of the 1985 National Health Interview Survey (NHIS) permit us to measure the progress made toward achieving by 1990 these four smoking-related objectives:

- The proportion of adults who smoke should be reduced to below 25 percent.
- At least 85 percent of the adult population should be aware of the special risk of developing and worsening chronic obstructive lung disease, including bronchitis and emphysema, among smokers.
- At least 90 percent of the population should be aware that smoking is a major cause of lung cancer, as well as multiple other cancers including laryngeal, esophageal, bladder, and other types.
- The share of the adult population aware that cigarette smoking is one of the major risk factors

for heart disease should be increased to at least 85 percent.

Method

The data used in this report are weighted estimates derived from the Health Promotion and Disease Prevention component of the 1985 NHIS, which was conducted by the National Center for Health Statistics (see reference 2 for details concerning the survey's design). To determine smoking prevalence, smoking behavior, and extent of the knowledge about the risks to health from smoking, the following questions were asked:

1. *Smoking prevalence.* Have you smoked at least 100 cigarettes in your entire life? Do you smoke cigarettes now? About how long has it been since you last smoked cigarettes fairly regularly? (for former smokers). On the average, about how many cigarettes a day do you now smoke? (for current smokers).

2. *Cigarette smoking behavior and knowledge of increased risk.* Do you think cigarette smoking definitely increases, probably increases, probably

does not, or definitely does not increase a person's chances of getting the following problems: emphysema, bladder cancer, cancer of the larynx or voice box, cataracts, cancer of the esophagus, chronic bronchitis, gallstones, lung cancer?

3. *Extent of knowledge.* Do you believe the following increases, does not increase, or don't know if it increases a person's chances of getting heart disease: cigarette smoking, worry or anxiety, high blood pressure, diabetes, being very overweight, drinking coffee with caffeine, eating a diet high in animal fat, history of heart disease, high blood pressure?

Results

The data presented in table 1 accord closely with those found in other current surveys on smoking behavior. Overall, 33 percent of men and 28 percent of women are current smokers, that is, persons who have smoked 100 cigarettes in their lives and are smokers at present. Among men who smoke, the highest rates of smoking occur in the age group 30-44 years, with 38 percent being current smokers. Among women, the current smoking prevalence rates are highest in the age groups 18-29 and 30-44 years, with 31 percent being current smokers.

The data on the responses concerning the relationships between cigarette smoking and emphysema and cigarette smoking and bronchitis are presented in table 2. Of the population reporting that cigarette smoking increases a person's chances of getting emphysema or bronchitis, a greater percentage reported that cigarette smoking increases one's chances of getting emphysema. However, the differences were small: 91 percent of men and 92 percent of women reported that cigarette smoking increases one's chances of getting emphysema; 85 percent of men and 88 percent of women reported that cigarette smoking increases one's chances of getting bronchitis.

Former smokers and persons who have never smoked cigarettes are more likely than current smokers to report that cigarette smoking increases one's chances of getting emphysema and bronchitis. Those differences are not great, but they are consistent among all age groups and for both sexes. Among current smokers, a greater percentage of women than men reported they believe cigarette smoking increases one's chances of getting either disease. This, too, is consistent for both diseases and all age groups. Generally a greater

Table 1. Prevalence of cigarette smoking according to sex and age and race and sex (percent)

Age-Sex-Race	Current smoker	Former smoker	Never smoked
Age groups, men:			
18-29 years	32.2	13.3	54.4
30-44 years	38.0	28.4	33.5
45-64 years	33.4	42.0	24.6
65 years and older	19.6	52.5	28.0
All men 18 years and older	32.6	30.9	36.5
Age groups, women:			
18-29 years	31.5	12.9	55.6
30-44 years	31.2	18.3	50.5
45-64 years	29.9	21.4	48.7
65 years and older	13.5	21.2	65.3
All women 18 years and older	27.8	18.2	54.0
Race and sex:			
White men	31.7	32.4	35.9
White women	27.7	19.2	53.1
Black men	39.8	20.9	39.2
Black women	30.9	12.0	57.1

SOURCE: 1985 National Health Interview Survey, Health Promotion and Disease Prevention Survey.

percentage of persons in the younger age groups, 18-29 and 30-44 years, than in older age groups reported that cigarette smoking increases a person's chances of getting emphysema or bronchitis.

Presented in table 3 are the percentages of the population who reported that cigarette smoking increases a person's chances of getting lung cancer and cancer of the larynx, esophagus, and bladder. A greater percentage of persons report that smoking increases a person's chances of getting lung cancer than the other three smoking-related cancers.

The percentages cited in the paragraphs that follow are as reported by men because the men and women in the survey population reported similarly. Ninety-five percent of men reported that smoking increases a person's chances for lung cancer; 87 percent, for cancer of the larynx; 79 percent, for cancer of the esophagus; and 37 percent, for cancer of the bladder. Again, for each of the cancers, a greater percentage of former smokers and persons who have never smoked reported the increased risk than did current smokers.

Of the survey population, 89 percent among men reported that cigarette smoking increases a person's chances of getting heart disease (table 4). As in responses concerning the other smoking-related diseases, a greater percentage of former smokers and persons who have never smoked

Table 2. Percent of population according to sex, age, and smoking status who reported that cigarette smoking increases a person's chances of getting emphysema and chronic bronchitis

Sex and age	Current smoker	Former smoker	Never smoked	Total
<i>Reported smoking increases risk of emphysema</i>				
Men				
Total	87.5	93.4	90.7	90.5
18-29 years	87.9	92.4	90.5	89.9
30-44 years	90.4	94.9	93.4	92.7
45-64 years	86.8	94.0	89.5	90.5
65 years and older	75.3	91.3	86.1	86.7
Women				
Total	90.3	94.2	91.6	91.7
18-29 years	89.5	91.8	90.3	90.2
30-44 years	92.2	98.1	94.6	94.5
45-64 years	92.4	94.5	93.5	92.9
65 years and older	79.8	90.4	87.6	87.0
<i>Reported smoking increases risk of chronic bronchitis</i>				
Men				
Total	79.2	87.0	87.9	84.8
18-29 years	84.3	89.7	89.8	88.0
30-44 years	81.4	90.5	89.9	86.8
45-64 years	76.3	87.9	86.9	83.8
65 years and older	61.9	80.1	76.7	75.6
Women				
Total	85.8	91.3	87.6	87.8
18-29 years	88.4	91.7	91.2	90.4
30-44 years	88.4	95.9	92.1	91.7
45-64 years	84.4	91.7	88.7	88.0
65 years and older	71.4	84.0	76.1	77.1

SOURCE: 1985 National Health Interview Survey, Health Promotion and Disease Prevention Survey.

Table 3. Percent of the population according to sex, age, and smoking status who reported that cigarette smoking increases a person's chances of getting lung cancer, cancer of the esophagus, cancer of the larynx, and bladder cancer

Sex and age	Current smoker	Former smoker	Never smoked	Total
<i>Reported that smoking increases risk of lung cancer</i>				
Men				
Total	91.6	95.4	96.3	94.5
18-29 years	96.2	98.4	98.2	97.6
30-44 years	93.5	97.4	97.0	95.8
45-64 years	88.2	95.8	94.6	92.9
65 years and older	78.0	90.9	89.8	88.1
Women				
Total	93.4	96.5	95.0	94.8
18-29 years	96.7	97.4	97.4	97.2
30-44 years	95.2	99.3	97.4	97.0
45-64 years	91.3	96.2	95.4	94.3
65 years and older	81.9	92.3	88.4	88.4

Table 3. Continued

Sex and age	Current smoker	Former smoker	Never smoked	Total
<i>Reported that smoking increases risk of cancer of the larynx</i>				
Men				
Total	80.7	88.8	90.6	86.8
18-29 years	86.3	92.5	92.3	90.4
30-44 years	84.3	94.5	93.2	90.2
45-64 years	75.8	88.7	90.2	84.7
65 years and older	60.7	80.3	77.9	81.0
Women				
Total	86.2	92.0	88.4	88.4
18-29 years	90.4	93.4	91.7	91.5
30-44 years	88.4	96.3	92.9	92.3
45-64 years	85.1	91.9	89.1	88.5
65 years and older	65.9	84.8	77.4	77.4
<i>Reported that smoking increases risk of cancer of the esophagus</i>				
Men				
Total	71.7	80.5	83.2	78.6
18-29 years	78.8	83.2	86.5	81.3
30-44 years	75.5	85.1	84.9	81.4
45-64 years	64.0	82.0	79.6	75.4
65 years and older	55.2	71.2	71.3	68.0
Women				
Total	77.8	84.9	81.4	81.0
18-29 years	81.9	86.1	85.4	84.4
30-44 years	79.1	90.5	86.5	84.9
45-64 years	75.7	83.5	81.5	80.2
65 years and older	64.9	78.0	69.7	70.8
<i>Reported that smoking increases risk of cancer of the bladder</i>				
Men				
Total	29.9	36.6	42.9	36.7
18-29 years	36.0	43.0	47.7	43.3
30-44 years	28.7	36.2	41.4	35.1
45-64 years	27.0	35.3	38.3	33.3
65 years and older	23.1	35.6	35.5	28.6
Women				
Total	27.2	34.2	39.0	34.9
18-29 years	33.8	36.8	43.6	39.6
30-44 years	25.8	34.7	37.9	33.5
45-64 years	24.6	33.7	40.1	34.1
65 years and older	17.5	31.8	33.5	31.0

SOURCE: 1985 National Health Interview Survey, Health Promotion and Disease Prevention Survey.

cigarettes than of current smokers reported that cigarette smoking increases one's chances of getting heart disease. For both men and women in all smoking categories, a greater percentage of persons in the younger age groups reported that cigarette smoking increases one's chances of heart disease than did persons in the older age groups.

Table 5 shows the percentages of the population who reported that the 10 factors listed in the

questionnaire, among which is cigarette smoking, increase one's chances of getting heart disease. All those factors except one—drinking coffee with caffeine—are considered to be risk factors for coronary heart disease. Cigarette smoking, high blood pressure, and high blood cholesterol are considered to be the three major risk factors for heart disease. Eighty-nine percent of the men reported that cigarette smoking increases one's chances of getting heart disease; 91 percent, high blood pressure; and 85 percent, high blood cholesterol.

Shown in table 6 are the percentages of the population who reported that cigarette smoking increases one's chances of getting cataracts and gallstones. Cataracts and gallstones are not known to be smoking-related diseases; generally, very few persons reported that cigarette smoking increases one's likelihood of getting either of those disorders (17 percent and 11 percent).

However, when categorized by age and smoking status, the responses concerning the smoking-related diseases (emphysema, bronchitis, cancers, and heart disease) paralleled those for the non-smoking-related diseases. That is, a greater percentage of former smokers and persons who have never smoked cigarettes reported an increased risk of cataracts and gallstones than did persons who are current smokers. Further, a higher percentage of the younger age groups reported that cigarette smoking increases the likelihood of those diseases. This result could indicate that, rather than being more knowledgeable about the health effects of smoking, nonsmokers are more apt than smokers to report cigarette smoking increases one's chances of contracting any disease.

Discussion

Perhaps the best evidence of the increased knowledge among the general population with respect to the health effects of cigarette smoking is the decline in the prevalence of smoking over the past 20 years. In 1965 over 52 percent of men and 34 percent of women were current smokers compared with 33 percent of men and 28 percent of women in 1985 (3).

Smoking remains the single most important cause of chronic obstructive lung disease (4). Recently, the National Center for Health Statistics estimated that more than 10 million Americans suffer from either chronic bronchitis or emphysema. Emphysema has become one of the chief

Table 4. Percent of population according to sex, age, and smoking status who reported that cigarette smoking increases a person's chances of getting heart disease

Sex and age	Current smoker	Former smoker	Never smoked	Total
<i>Men</i>				
Total	86.5	92.2	92.5	89.4
18-29 years	91.2	95.3	94.8	92.4
30-44 years	90.0	95.7	93.1	91.4
45-64 years	82.2	93.0	90.0	88.0
65 years and older	68.8	85.3	84.1	80.9
<i>Women</i>				
Total	88.6	94.4	90.7	90.0
18-29 years	93.3	96.2	94.8	93.6
30-44 years	90.0	96.8	93.7	92.5
45-64 years	86.3	94.1	90.4	89.4
65 years and older	73.8	90.0	81.8	81.4

SOURCE: 1985 National Health Interview Survey, Health Promotion and Disease Prevention Survey.

Table 5. Percent of population according to sex who reported that certain conditions increase a person's chances of getting heart disease

Condition	Men	Women
Cigarette smoking	89.4	90.0
Worry or anxiety	82.1	85.5
High blood pressure	91.0	91.3
Diabetes	60.2	60.8
Being very overweight	92.0	93.3
Overworked	67.2	74.3
Drinking coffee with caffeine	48.3	53.5
Eating a diet high in animal fat	76.8	82.6
History of heart disease	79.7	85.2
High blood cholesterol	84.9	87.5

SOURCE: 1985 National Health Interview Survey, Health Promotion and Disease Prevention Survey.

causes of disability in the United States, with more than 2 million persons suffering from it, at least a quarter of whom are so seriously ill they can no longer perform their usual activities. Emphysema occurs almost exclusively in cigarette smokers. The mortality associated with chronic obstructive lung disease usually occurs after an extended period of suffering and disability, and many times a person dies of another disease. Of all deaths caused by emphysema or chronic bronchitis, 80 to 90 percent are directly attributable to cigarette smoking—approximately 50,000 deaths each year.

More than 90 percent of the population know that cigarette smoking increases a person's chances of getting emphysema. Eighty-five percent know smoking increases a person's chances of getting

Table 6. Percent of population according to sex, age, and smoking status who reported that cigarette smoking increases a person's chances of getting cataracts and gallstones

Sex and age	Current smoker	Former smoker	Never smoked	Total
<i>Reported that smoking increases the risk of cataracts</i>				
Men				
Total	12.2	14.8	21.9	16.5
18-29 years	16.4	24.8	27.4	23.5
30-44 years	12.1	13.7	19.8	15.2
45-64 years	8.8	13.6	15.3	12.4
65 years and older	8.9	12.4	15.9	12.7
Women				
Total	11.0	14.5	17.3	15.1
18-29 years	14.6	16.2	24.0	20.1
30-44 years	9.8	15.3	16.7	14.3
45-64 years	9.8	12.5	15.2	13.0
65 years and older	6.5	15.0	11.6	11.7
<i>Reported that smoking increases the risk of gallstones</i>				
Men				
Total	8.9	9.9	14.6	11.3
18-29 years	12.4	16.0	18.9	16.4
30-44 years	8.1	9.2	11.2	9.5
45-64 years	7.0	8.5	11.3	8.7
65 years and older	6.7	9.9	12.2	9.9
Women				
Total	8.8	10.6	12.8	11.3
18-29 years	10.9	14.4	16.8	14.7
30-44 years	7.6	10.0	12.4	10.4
45-64 years	9.1	9.3	11.6	10.3
65 years and older	5.5	9.9	9.5	9.0

SOURCE: 1985 National Health Interview Survey, Health Promotion and Disease Prevention Survey.

bronchitis. There is no way to determine if this knowledge includes knowledge of the magnitude of the risk of chronic lung disease associated with smoking or the extent of the prevalence of lung disease in the population.

Cancer is second only to heart disease as a cause of death in the United States. Smoking is the single largest cause of cancer, and lung cancer is the largest cancer killer (5). It is estimated that 85 percent of lung cancer cases are attributable to cigarette smoking, and smokers are at least 10 times more likely to die of lung cancer than nonsmokers. The American Cancer Society estimates that in 1986 lung cancer will cause 130,000 deaths (6). The incidence of lung cancer in white men dropped in 1982 and 1983, and this decline has been attributed to the decline in smoking among white men over the past 20 years. The incidence of lung cancer continues to rise, however, in white women and black men and women.

The death rate for lung cancer among women in 1986 surpassed that for breast cancer, which for 50 years was the number one cancer killer among women. Ninety-five percent of the population know that cigarette smoking increases the chances of lung cancer.

In 1986 approximately 12,000 persons will be diagnosed with cancer of the larynx and 4,000 will die (6). Of those cases, 50 to 70 percent result from smoking, which carries an approximate five-fold increase in risk (5). Eighty-seven percent of the population know that cigarette smoking increases one's chances of getting cancer of the larynx.

This year more than 9,000 persons will be diagnosed as having cancer of the esophagus, which has one of the poorest survival rates of all cancers—killing nearly 9,000 this year (6). Cigarette smoking is estimated to be responsible for more than half of these deaths (5). Seventy-nine percent of the population know that smoking increases one's chances of getting cancer of the esophagus.

In 1986, 40,000 new cases of bladder cancer will be diagnosed, and approximately 7,200 deaths will be caused by bladder cancer (6). It has been estimated that between 30 and 40 percent of bladder cancers are smoking-related (5). Only 35 percent of the population know that cigarette smoking increases one's chances of bladder cancer.

Heart disease is the number one cause of death in the United States and responsible for up to 30 percent of all the nation's deaths (7). It has been estimated that, overall, up to 30 percent of all heart disease deaths are attributable to cigarette smoking, or as many as 170,000 deaths each year. Smoking, elevated serum cholesterol, and hypertension are the three major risk factors posing approximately the same increased risk of coronary heart disease. Eighty-nine percent of the population know that cigarette smoking increases the risk of heart disease.

Summary and Conclusion

Data from the 1985 NHIS Health Promotion and Disease Prevention Survey permit these measures of progress toward achieving the goals of the 1990 objectives:

1. By 1990, the proportion of adults who smoke is to be reduced to below 25 percent. In 1985, 31 percent of the population were current smokers. Although the knowledge that smoking increases

the risk of chronic obstructive lung disease, cancer, and heart disease measured relatively high, even among smokers, and overall there has been a substantial reduction in the prevalence of cigarette smoking since its peak in 1965, it is not certain that this important objective will be achieved.

2. By 1990, at least 85 percent of the population are to be aware of the cigarette smoker's special risk of developing and worsening chronic obstructive lung disease, including bronchitis and emphysema. This goal has been surpassed. Today more than 90 percent of the population know that cigarette smoking increases one's chances of getting emphysema, and more than 85 percent know this about bronchitis.

3. By 1990, at least 90 percent of the population are to be aware that smoking is a major cause of lung cancer as well as multiple other cancers including laryngeal, esophageal, and bladder. This percentage of awareness has been achieved for lung cancer but not for other cancers. In 1985, 95 percent of men knew that cigarette smoking increases a person's chances of lung cancer. Eighty-seven percent knew this about cancer of the larynx, and 79 percent knew it about cancer of the esophagus, but only 37 percent knew it about bladder cancer.

4. By 1990, the share of the adult population aware that cigarette smoking is one of the major

risk factors for heart disease should be increased to at least 85 percent. In 1985, 89 percent of the population knew that cigarette smoking increases one's chance of heart disease.

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Perceptions of Risks of Smoking and Heavy Drinking during Pregnancy: 1985 NHIS Findings

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Synopsis.....

As part of the Health Promotion and Disease Prevention Questionnaire administered in the 1985 National Health Interview Survey, nearly 20,000 respondents ages 18-44 answered questions about their awareness of the risks of smoking and heavy drinking during pregnancy. In reference to smoking, interviewers asked about miscarriage, stillbirth, prematurity, and low birth weight; in reference to heavy drinking, they asked about miscarriage, mental retardation, low birth weight, and birth defects, as well as fetal alcohol syndrome. For each of these adverse outcomes, a majority of subjects acknowledged increased risk because of smoking or heavy drinking during pregnancy. The range was 66-80 percent of respondents for the four questions on smoking, with the perceived association to smoking strongest for