Use of Tobacco Products among US Adults: Results from 2014 and 2015 National Surveys

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INTRODUCTION

This study assessed the awareness and use of electronic nicotine delivery systems (ENDS) and dual use of tobacco products with ENDS among US adults in 2014 and 2015.

METHODOLOGY

Data Source
- The Tobacco Products and Risk Perceptions Surveys from 2014 and 2015 of cross-sectional probability samples of **5,717** and **6,051,** respectively, US adults from Gfk's KnowledgePanel.
- *2015 findings are preliminary and should not be cited.*

MEASURES
Demographics
- Sex, Age, Race/Ethnicity, Education, Annual household income, and Sexual orientation.

Cigarette Smoking Status
- *Current Smokers:* have smoked at least 100 cigarettes in their lives and currently smoked every day or some days.
- *Former Smokers:* have smoked at least 100 cigarettes in their lives and currently smoked not at all.
- *Never Smokers:* have not smoked 100 cigarettes in their lives.
- *Non-recent former smokers:* quit smoking 5+ years ago.
- *Recent former smokers:* quit < 5 years ago.

Awareness and Use of ENDS
- *Aware:* have heard of the product before taking the survey.
- *Ever Users:* have *tried* the product, *even just one time.*
- *Current Users:* have *used* the product *at least once during the past 30 days.*

RESULTS

In 2014, nearly 1 in 20 US adults were currently using ENDS. (Table 1) Use was highest among current smokers, with more than 1 in 5 reporting current ENDS use (dual use).

In 2015, an estimated 5.4% of US adults were current ENDS users, with 21.6% of current smokers reporting current ENDS use.

Among current users of ENDS, Figure 1 shows:
- 68% (2014) and 56% (2015) were current smokers (dual users).
- 20% (2014) and 23% (2015) were recent former smokers.
- 2% (2014) and 3% (2015) were non-recent former smokers (potentially former smokers returning to nicotine).
- 10% (2014) and 17% (2015) were never smokers.

Furthermore, 21% (2014) and 30% (2015) of current ENDS users reported current use of any other combustible tobacco (LCCs, large cigars, and hookah; excludes cigarettes), and 75% (2014) and 67% (2015) reported current use of any combustible tobacco, suggesting substantial poly-use.

Current ENDS use was highest among young adults and those reporting lower educational attainment. (Table 2) An apparent increase in use between 2014 and 2015 is observed for 18-24 year olds and those with less than an HS education.

ENDS use was highest among those at the lowest income and those reporting poorer physical health, although these associations were statistically significant only in 2014.

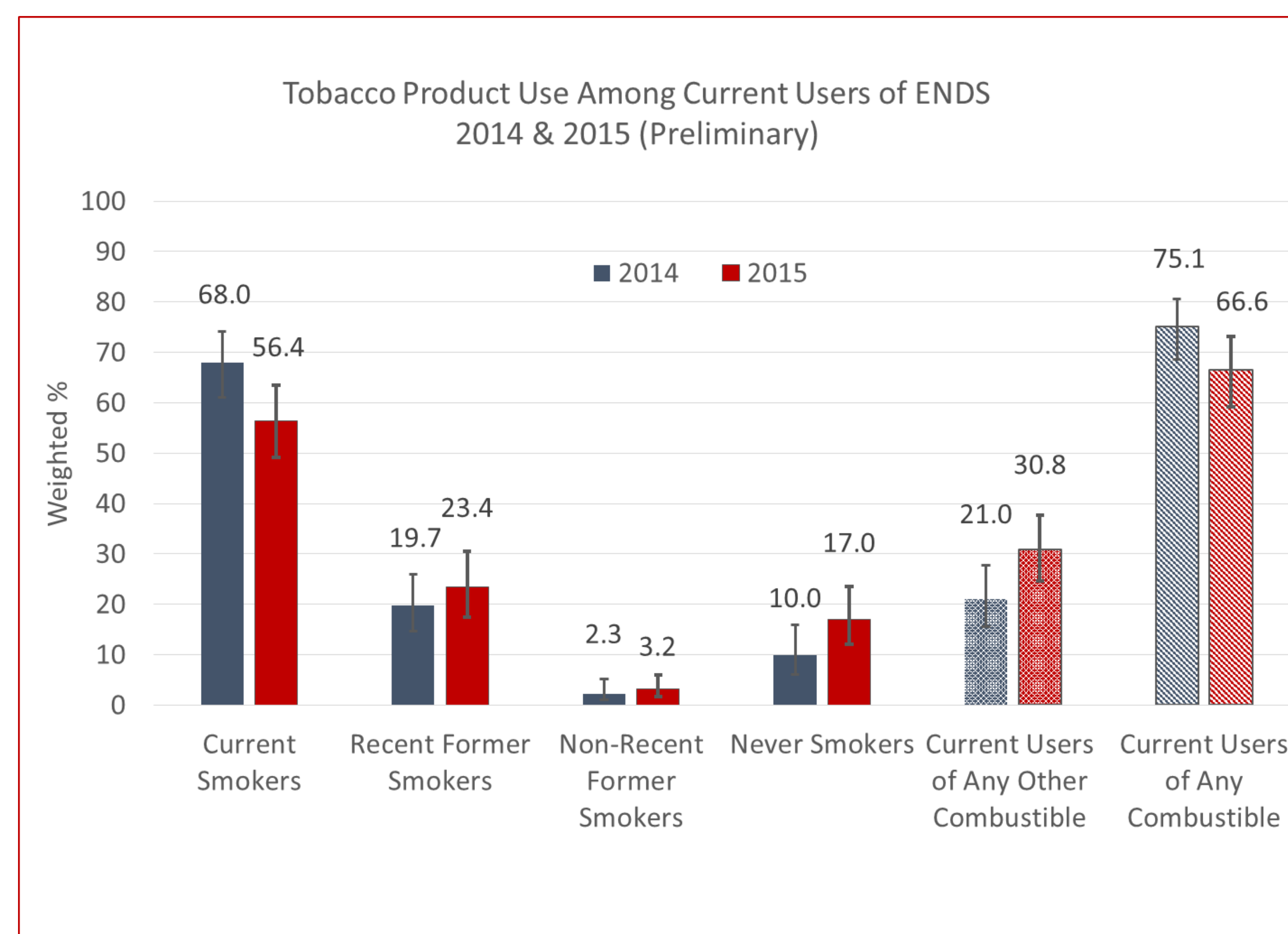Figure 1. Tobacco Product Use among Current Users of ENDS, 2014 & 2015 (Preliminary)

Tobacco Product Use Among Current Users of ENDS
2014 & 2015 (Preliminary)

Table 1. Awareness and Use of Electronic Nicotine Delivery Systems by Cigarette Smoking Status among U.S. Adults, 2014 & 2015 (Preliminary)

			Cigarette Smoking Status		
	Year	Overall	Current	Former	Never
Awareness of ENDS	2014	91.9 (91.0, 92.7)	89.9 (87.5, 91.8)	91.9 (90.2, 93.4)	92.5 (91.3, 93.6)
	2015	86.7 (85.4, 87.9)	90.7 (87.8, 93.0)	88.4 (86.1, 90.3)	84.9 (83.0, 86.6)
Ever use ENDS	2014	14.9 (13.9, 16.0)	51.1 (47.8, 54.4)	13.3 (11.4, 15.4)	4.7 (3.8, 5.8)
	2015	16.8 (15.7, 18.1)	54.1 (50.0, 58.0)	18.2 (6.0, 8.4)	7.1 (6.0,8.4)
Past 30 day use of ENDS	2014	4.9 (4.3, 5.5)	20.7 (18.1, 23.6)	3.8 (2.8, 5.1)	0.9 (0.5, 1.5)
	2015	5.4 (4.7, 6.2)	21.6 (18.5, 25.0)	5.1 (3.8, 6.9)	1.6 (1.1, 2.3)

CONCLUSIONS

ENDS use is highest among smokers and, conversely, the majority of ENDS users are also currently using cigarettes and other combustible products. It is unclear whether dual use will promote quitting combustible tobacco products or not.

Because one-sixth of ENDS users have never smoked and one-quarter are former smokers, some who may have started after they quit smoking, ENDS use among these groups should continue to be monitored.

Continued surveillance of socio-demographic patterns of ENDS use is also needed to assess whether ENDS may reduce or increase smoking-related health disparities.

Patterns of trial and use of ENDS are evolving rapidly and merit continued surveillance and study.

LIMITATIONS

Use of an internet panel may decrease representativeness of the sample.

Self-reporting method may raise issues regarding accuracy of measuring ENDS use.

Rapid changes in available ENDS products raise questions regarding accuracy of terminology used to refer to ENDS in the surveys.

Caution is warranted when comparing 2014 and 2015 estimates due to changes in measurement.

2015 estimates are preliminary and no tests were conducted to evaluate the statistical significance of prevalence differences between 2014 and 2015.

Table 2. Percentage of Current Use of ENDS among US Adults, 2014 & 2015 (Preliminary)

Demographic Characteristics	ENDS	
	2014	2015
Overall	4.9 (4.3, 5.5)	5.4 (4.7, 6.2)
Sex	p=0.20	p= 0.75
Male	5.3 (4.4, 6.3)	5.3 (4.3, 6.4)
Female	4.5 (3.7, 5.4)	5.5 (4.6, 6.7)
Age (years)	p<0.001	p<0.001
18-24	5.2 (3.4, 7.9)	10.0 (6.0, 15.0)
25-34	8.6 (6.6, 11.0)	7.8 (6.1, 9.9)
35-44	5.1 (3.8, 6.8)	6.0 (4.3, 8.3)
45-54	4.8 (3.6, 6.3)	6.0 (4.5, 8.1)
55-64	4.0 (3.0, 5.2)	2.8 (2.0, 4.0)
65+	2.2 (1.5, 3.2)	2.1 (1.4, 3.3)
Race / Ethnicity	p=0.81	p=0.80
White, NH	4.8 (4.1, 5.5)	5.3 (4.5, 6.3)
Black, NH	4.5 (3.0, 6.6)	4.6 (2.9, 7.4)
Hispanic	5.2 (3.5, 7.7)	6.1 (4.4, 8.5)
Other, NH	5.9 (3.6, 9.6)	5.9 (3.2, 10.8)
Education	p=0.003	p<0.001
< High school	6.4 (4.5, 9.1)	9.5 (6.3, 14.1)
High school	5.1 (4.1, 6.4)	5.4 (4.3, 6.6)
Some college	5.8 (4.7, 7.1)	5.8 (4.6, 7.3)
College degree+	3.1 (2.4, 4.1)	3.5 (2.7, 4.7)
Household Income	p<0.001	p=0.054
<$15K	8.2 (6.0, 11.2)	8.1 (5.7, 11.4)
$15K – $24.9K	5.8 (3.8, 8.7)	4.2 (2.2, 7.7)
$25K – $39.9K	5.6 (4.2, 7.5)	4.2 (3.1, 5.8)
$40K – $59.9K	5.2 (3.8, 7.0)	5.2 (3.9, 7.0)
$60K – $84.9K	4.8 (3.5, 6.6)	5.9 (4.5, 7.8)
$85K – $99.9K	6.5 (4.1, 10.0)	7.2 (4.4, 11.5)
$100K +	2.3 (1.7, 3.2)	4.2 (3.0, 5.9)
Perceived Health Status	p<0.001	p<0.561
Excellent	2.1 (1.2, 3.9)	5.1 (3.1, 8.3)
Very Good	4.1 (3.2, 5.1)	4.8 (3.8, 6.1)
Good	5.1 (4.2, 6.2)	5.4 (4.3, 6.8)
Fair	8.6 (6.4, 11.5)	6.8 (4.9, 9.3)
Poor	10.1 (5.5, 17.7)	6.3 (3.5, 11.1)
Sexual Orientation	p=0.10	p=0.11
Heterosexual	4.8 (4.2, 5.4)	5.3 (4.6, 6.1)
Not-heterosexual	6.7 (4.5, 9.9)	7.7 (4.9, 11.8)