# Characterization of a Continuum of Risk Associated with Various Behaviors in Users and Nonusers of Tobacco Products



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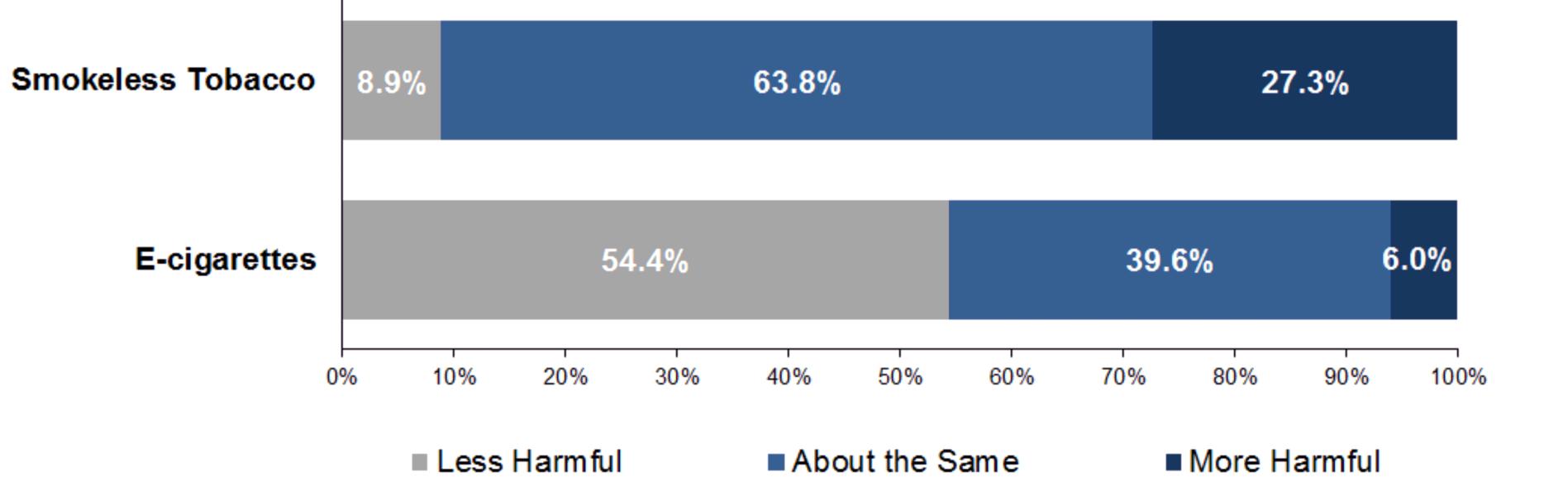
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### Introduction

- As part of the July 2017 announcement Dr. Scott Gottlieb, FDA Commissioner, acknowledged a continuum of risk among tobacco products, with conventional, combustible cigarettes at the highest end of that spectrum and non-combustible products on the lower end.
- Despite the compelling scientific evidence regarding non-combustible products like smokeless tobacco products (STP) being less risky than cigarettes (CIG), many adult tobacco consumers continue to believe that STP is as or more harmful than cigarettes.
- The PATH (Population Assessment of Tobacco and Health) WAVE 1 survey demonstrates that the vast majority of smokers (88%) said that ST is as or more harmful than cigarettes (Figure 1). Similar findings are evident in the HINTS (Health Information National Trends) survey where a vast majority of smokers (71%) and dual users of STP and CIGS (72%) do not believe that STP is less harmful than cigarettes (Figure 2).
- Many in public health (e.g. Borland 2012) suggest that "[h]elping people develop a better understanding of relative risks
  is likely to maximize the public health benefit".
- To truly understand people's relative risk perceptions we believe it is important to assess comparative risk at a broad level, which includes a holistic marketplace view rather than a single behavior direct comparisons.
- Therefore, our purpose was to assess risk perceptions in relation to various tobacco behaviors focusing on the comparison of STP to CIG.

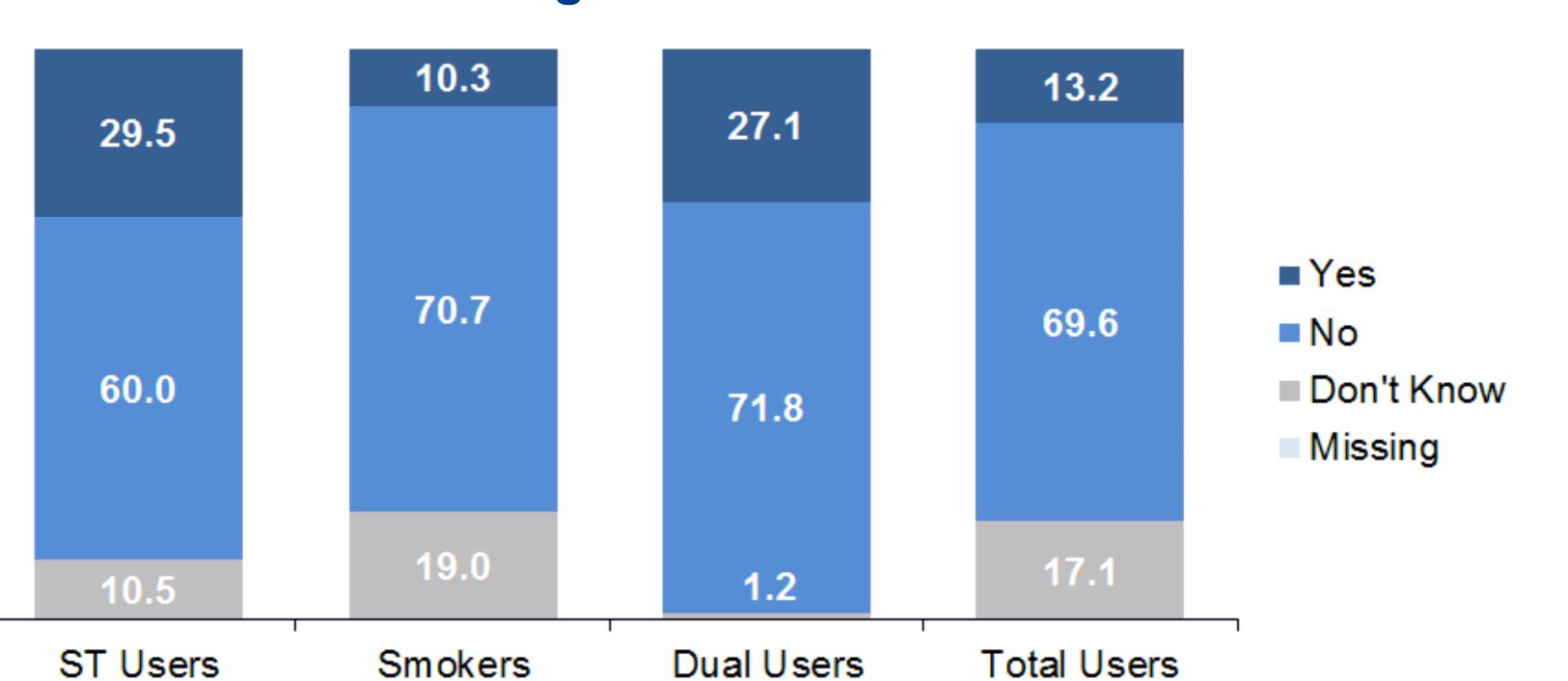
# Figure 1: Harm Perceptions among Adult Cigarette Smokers – PATH Wave 1 (2013-2014)\*



Source: ALCS Analysis of PATH Wave 1 (Sept '13- Dec '14) Adult Public Use File.

\* Harmfulness of using [product] compared to smoking cigarettes (among everyday or some days adult tobacco users). In PATH, "Don't Know" is not included in the valid response set. Percentages may not sum to 100% due to rounding. Data for E-cigarettes included to provide context.

Figure 2: Proportion of Adult Tobacco Consumers that Believe that ST is Less Harmful than Cigarettes



Source: Data from ALCS analysis of the 2015 National Cancer Institute Health Information National Trends Survey (HINTS). Proportions represent responses to the question: "In your opinion, do you think that some smokeless products, such as chewing tobacco, snus and snuff, are less harmful to a person's health than cigarettes?"

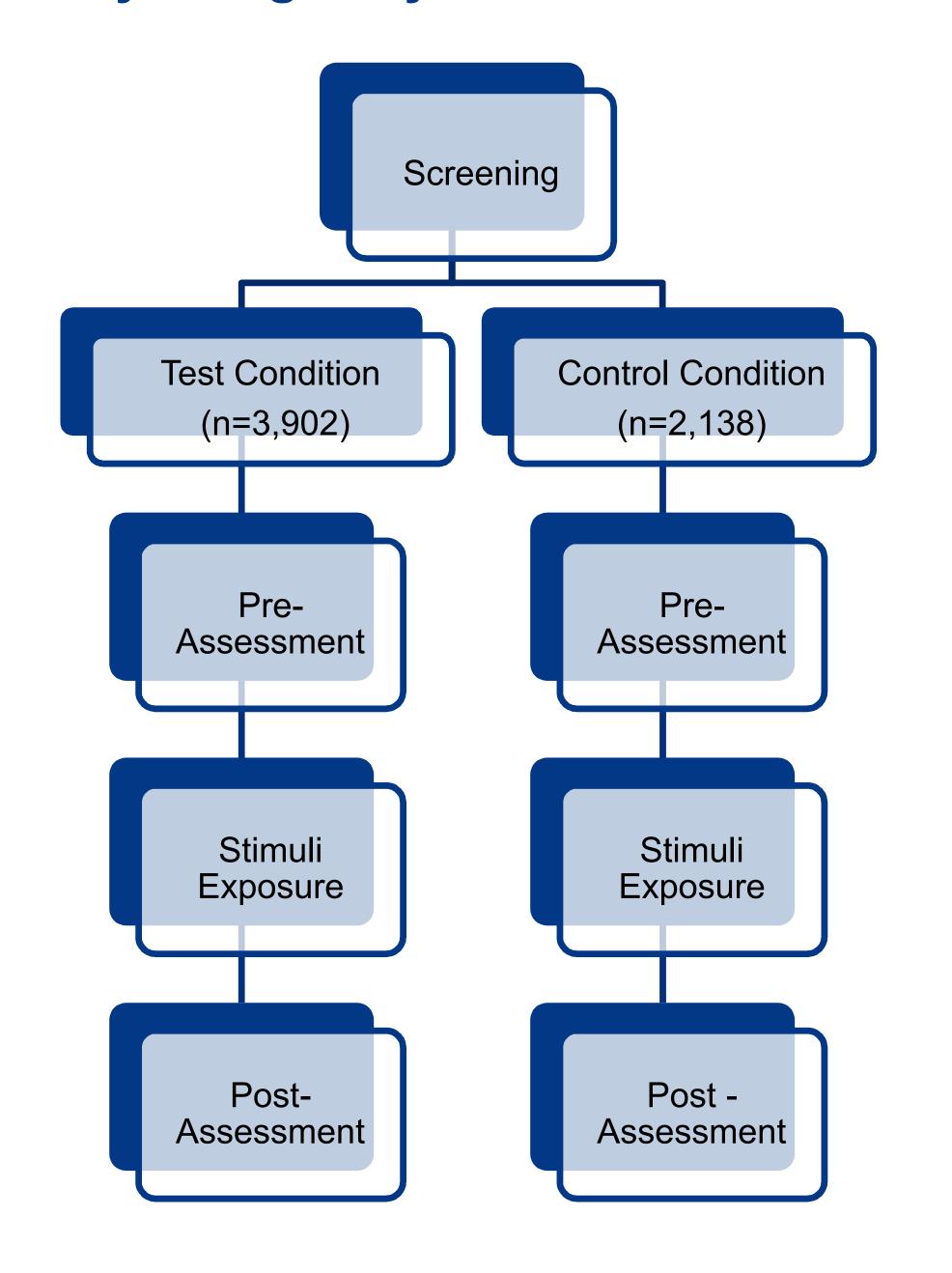
Definitions: 'ST users' include individuals who had used smokeless tobacco (ST) at least 20 times and were using every day or some days at the time of the assessment but did not smoke cigarettes at the time of the assessment (n=60). 'Smokers' include individuals who had smoked at least 100 cigarettes and were smoking cigarettes every day or some days at the time of the assessment, but did not use ST at the time of the assessment (n=467). 'Dual users' include those who met lifetime criteria for both ST and cigarettes and were using both products every day or some days at the time of the assessment (n=21). ST included chewing tobacco, snus, snuff, or dip.

# Methods

## Research Design & Analysis

- We conducted an online survey in a non-probability sample (n=6,040) of users and nonusers of tobacco products in 2015. We investigated, among other end-points, the risk perceptions of cigarettes (CIG), moist smokeless TP (MST), snus (SN), cessation products (CP), complete quitting (QT) and never using (NU) TP across subgroups consisting of current adult smokers not planning to quit smoking (ASNPQ), current adult smokers planning to quit smoking (ASPQ), current adult dual users of cigarettes and MST (DU), current adult MST exclusive users (EXCL), former adult users of cigarettes and/or MST (FRM), adult past triers of tobacco (NONPT), and adult never users of tobacco (NT).
- Median risk perception responses were calculated by subgroup per each tobacco behavior listed. Additionally, ratings of STP (dip/snuff and snus) risk were compared to CIG risk as proportions of individuals rating STP as more risk than CIG, the same risk as CIG or less risk than CIG.
- The question used for this assessment was as follows: "In your opinion, what is the risk to a person's health for each of the following behaviors", which included the following in-context relational comparators to be placed on the 10 point scale (1 = No risk to health and 10 = Great risk to health):
- Dipping half a can of dip/snuff products daily
- Using half a can of snus daily
- Smoking 15 cigarettes daily
- Using an FDA (Food and Drug Administration) approved over-the-counter smoking cessation medication, as directed, for quitting smoking (Nicorette® gum, the patch, etc.)
- Completely quitting all tobacco use
   Never using tobacco products

#### Research Design – Study Design Layout



#### Research Design – Subgroup Definitions

- Adult Exclusive Smokers Planning to Quit (ASPQ; n=609): current, past 30-day cigarette smokers who reported (1) now smoking cigarettes "every day," "some days," or "rarely" and within the past 30 days, (2) planning to quit smoking within next 30 days.
- Adult Exclusive Smokers Not Planning to Quit (ASNPQ; n=611): current, past 30-day cigarette smokers who reported (1) now smoking cigarettes "every day," "some days," or "rarely" and within the past 30 days, and (2) not planning to quit smoking within next 30 days.
- Dual Users of Cigarettes and MST (n=607): Concurrent tobacco product users of MST and cigarettes who reported (1) now using snuff "every day," "some days," or "rarely" and within the past 30 days, and (2) now smoking cigarettes "every day," "some days," or "rarely" and within the past 30 days
- Exclusive MST Users (n=600): current, past 30-day MST users who reported (1) now using a MST product "every day," "some days," or "rarely" and within the past 30 days.
- Former Tobacco User (of MST/Cigarettes; n=1,204): former tobacco users who reported (1) having used the product to the lifetime ever use criterion; (2) "Not at all" to the product and (3) having completely quit using the product for at least 6 months.
- Ever Triers (of MST/Cigarettes; n=1,202): former tobacco users who reported (1) having used the product less than the threshold for lifetime ever use criterion; (2) "Not at all" to the product and (3) having completely quit using the product for at least 6 months.
- **Never Triers** (of MST/Cigarettes; n=1,207): respondents who reported having never used any tobacco product to the lifetime ever use criterion.

#### Research Design – Subgroup Quotas By Key Demographics

		ASPQ	ASNPQ	Dual	MST	Past Users	Former Triers	Never Triers
	Northeast	17.2%	17.2%	9.2%	7.2%	18.2%	18.2%	18.2%
D:	Midwest	26.3%	26.3%	27.6%	27.0%	24.2%	24.2%	21.0%
Region	South	39.2%	39.2%	46.0%	47.0%	34.6%	34.6%	35.4%
	West	17.3%	17.3%	17.2%	18.7%	23.0%	23.0%	25.4%
	White /Caucasian	80.8%	81.3%	92.8%	92.2%	85.4%	83.9%	68.8%
	Black /African - American	13.4%	12.8%	3.1%	5.0%	7.9%	7.8%	15.5%
	Asian	1.6%	2.2%	.0%	.7%	3.0%	2.7%	7.3%
Race/ Ethnicity	Native Hawaiian or other Pacific Islander	.2%	.5%	.2%	.1%	.0%	.0%	.3%
	American Indian or Alaska Native	1.4%	2.0%	2.5%	1.6%	2.0%	1.3%	1.3%
	Other	3.6%	3.2%	2.0%	.4%	3.6%	5.4%	8.3%
	Hispanic or Latino	10.4%	10.4%	5.4%	.8%	8.7%	8.7%	18.8%
	Male	53.3%	53.3%	83.8%	94.3%	61.0%	61.0%	33.3%
	LA-34	33.1%	33.7%	60.2%	40.2%	17.8%	17.8%	40.0%
	35-49	28.7%	28.3%	23.6%	31.0%	25.1%	25.0%	28.3%
<b>C</b> l	50+	38.2%	38.0%	16.1%	28.8%	57.1%	57.1%	
Gender	Female	46.7%	46.7%	16.2%	5.7%	39.0%	39.0%	66.7%
	LA-34	31.4%	31.4%	61.0%	11.5%	16.1%	15.9%	32.0%
	35-49	29.3%	29.5%	12.3%	9.6%	21.7%	21.6%	26.0%
	50+	39.3%	39.1%	26.7%	78.8%	62.2%	62.5%	41.9%

## Results

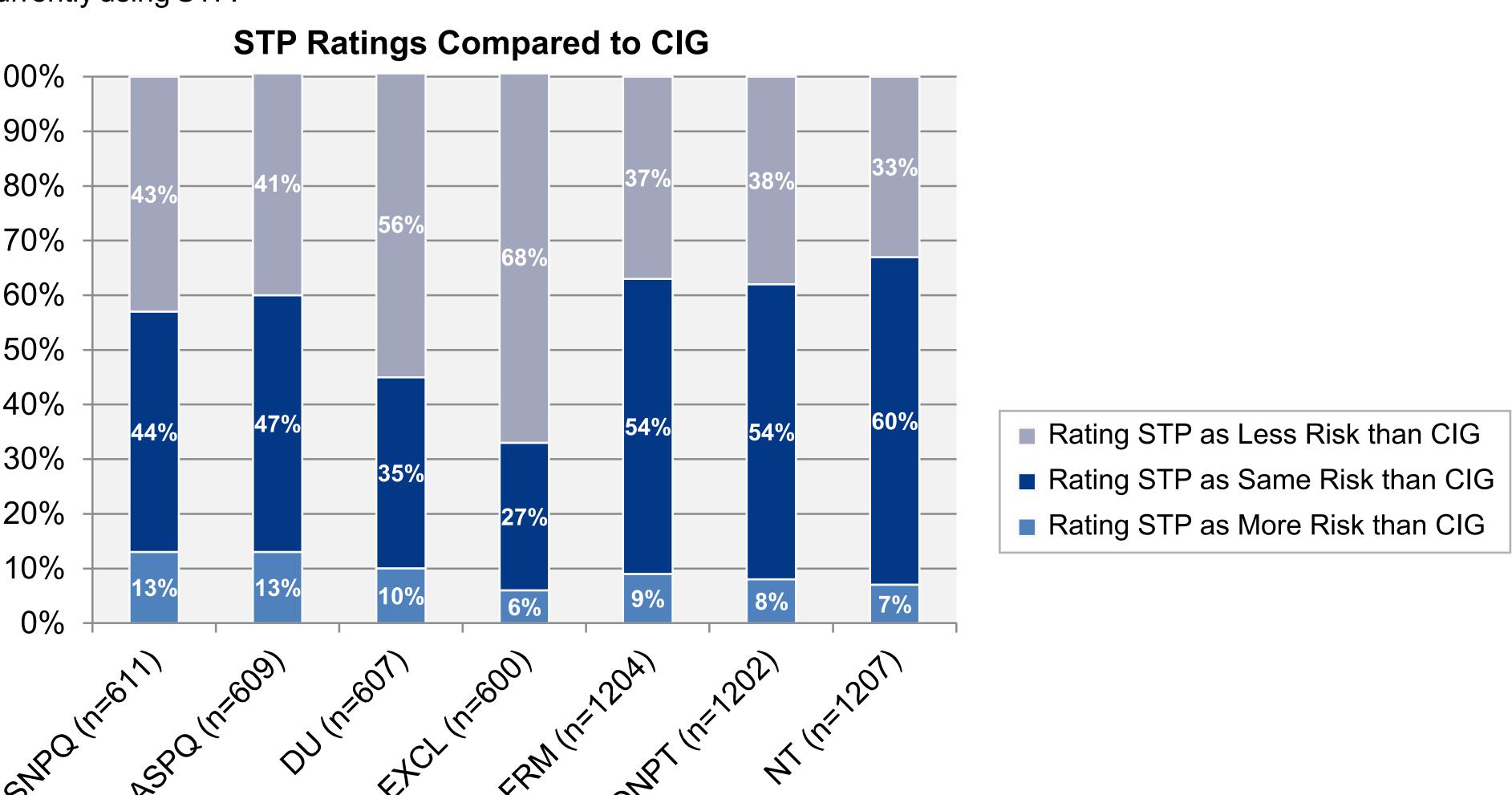
Participants view various tobacco behaviors on a continuum of risk, with cigarettes perceived as most risky and never using tobacco as the least risky. STP are perceived to have similar risk as cigarettes, especially among audiences not currently using ST.

Median Risk Perception	ASNPQ n=611	ASPQ n=609	<b>DU</b> n=607	EXCL n=600	FRM n=1204	NONPT n=1202	NT n=1207
Cigarettes	8	9	8	8	9	10	10
Moist Smokeless Tobacco	7	8	6	6	8	9	9
Snus	7	8	6	6	8	8	9
<b>Cessation Product</b>	5	5	4	4	4	5	5
Quitting Tobacco	2	2	2	1	1	2	2
Never Using Tobacco	1	1	1	1	1	1	1

• Females, both users and nonusers of tobacco, rate the risk of tobacco behaviors higher than that of their male counterparts.

	Us	ers	Nonusers		
Median Risk Perception by Gender	Female n=706	Male n=1721	Female n=1746	Male n=1867	
Cigarettes	9	8	10	9	
Moist Smokeless Tobacco	8	7	9	8	
Snus	8	6	9	8	
Cessation Product	4	4	5	5	
Quitting Tobacco	2	2	2	2	
Never Using Tobacco	1	1	1	1	

 A notable proportion rate STP as having the same or more risk than cigarettes, especially among audiences not currently using STP.



## Conclusion

- We report the first systematic assessment of the risk continuum in a large sample of users and nonusers of STP. The absolute values should be interpreted with caution, however the relative ranking does provide meaningful insights.
- We observe that the respondents accurately perceive that NU or QT carry minimal risks and CIG carry the most risk. All respondents perceive that CP carry significant risk relative to QT and NU.
- Furthermore, we observed risk perceptions vary by product use behaviors and by gender.
- AS perceive STP (MST and SN) carry similar risks as CIG with a large proportion (~59%) perceiving that STP carries the same or more risk as CIG. Although users of MST perceive that STP carries slightly lower risk, many (33%-EXCL and 45%-DU) still perceive STP have the same risks or more risk as CIG.
- The proportions rating STP with the same or more risk as CIG are lower than what it seen in the literature, presumably due to the metric differences (response option range and the indirect versus direct nature of the questions). However, a large portion of consumers continue to display misperceptions regarding the risks of STP relative to CIG.

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