Adult Perceptions of the Relative Harmfulness of Tobacco Products: Descriptive Findings from Wave 1 of the PATH Study, 2013-14

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Introduction

- Currently, there is a lack of research examining the perceived harmfulness of many of the various tobacco products that are available in the United States and few studies compare the relative perceptions of the harmfulness of different products.

- Identifying consumers' perceptions of harm can help to inform regulatory activities with respect to marketing tobacco products and communicating product risks.

Objectives

(1) To measure adult perceptions of the harmfulness of 8 tobacco products relative to cigarettes;

(2) To identify characteristics of adult tobacco users related to perceptions that a particular product is less harmful than cigarettes;

(3) To determine the relation between harmfulness perceptions and the likelihood of using a product; and

(4) To measure perceptions of harmfulness of cigarettes and how these perceptions vary as a function of products used.

Methods

- Data are from Wave 1 of the Population Assessment of Tobacco and Health (PATH) Study, a nationally representative cohort study of adults and youth in the United States.

- Results are from the 32,320 respondents in the PATH adult (18 years and older) survey conducted from September 2013 to December 2014.

- The PATH Study used Audio-Computer Assisted Self-Interviews (ACASI) available in English and Spanish to collect information on tobacco-use patterns and associated health behaviors.

Methods Continued

1. Differences in perceptions between products were tested using a repeated measures approach. Binary Generalized Estimating Equation (GEE) regression models were used to test for differences between products (controlling for demographic variables). Tests were adjusted for multiple comparisons using a Bonferroni correction.

2. Weighted logistic regression models were used to examine the factors associated with believing each of the non-cigarette tobacco products was less harmful than cigarettes. Models adjusted for demographic variables and knowledge of the health harms caused by cigarette smoking.

3. Weighted logistic regression models were used to examine the likelihood of using each tobacco product by the belief that the product is: (a) less harmful; and (b) more harmful than cigarettes.

4. Descriptive statistics were used to estimate the proportion of respondents who used each product if they believed that: (a) cigarettes were not at all/slightly or somewhat harmful; or (b) if they believed that cigarettes were very/extremely harmful. Only current users of any of the non-cigarette tobacco products or cigarettes were included in this analysis.

- Replicate weights were used to estimate all variances.

Results

1. Perceptions of the harmfulness of 8 tobacco products relative to cigarettes*±

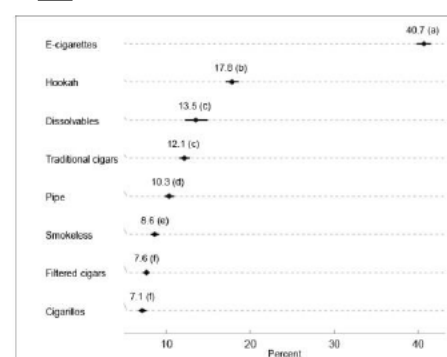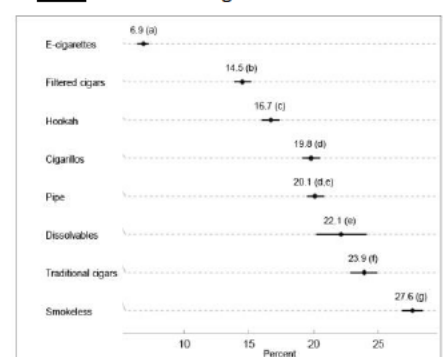Figure 1A: % of Population thinking each product is **less** harmful than cigarettes

Figure 1B: % of Population thinking each product is **more** harmful than cigarettes

*Among those who had heard of the product ±Products that have different letters are significantly different (p<0.05 using a False Discovery Rate adjustment).

Results

- E-cigarettes was the product that was most likely to be perceived as less harmful than cigarettes, followed by hookah.

- Smokeless tobacco was the product that was more likely to be perceived as more harmful than cigarettes followed by traditional cigars.

2. Factors associated with the belief that each non-cigarette tobacco product is less harmful than cigarettes

- Those less knowledgeable about the health risks of smoking were significantly more likely to believe that each non-cigarette tobacco product was less harmful than cigarettes.

- With the exception of hookah, males were more likely to believe that each non-cigarette tobacco product was less harmful than cigarettes.

- Young adults were significantly more likely than older adults to believe that e-cigarettes and hookah are less harmful than cigarettes.

- Other factors associated with perceptions of the relative harmfulness of non-cigarette tobacco products varied by product type.

3. Current use* of Non-Cigarette Products by Perceptions of Relative Harm±

	E-Cigarettes	Snus	Smokeless	Traditional Cigars	Filtered Cigars	Cigarillos	Pipe	Hookah
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Less harmful vs. about the same	3.19 (2.91-3.51)	2.49 (1.91-3.26)	3.72 (3.24-4.27)	3.25 (2.83-3.72)	2.46 (1.88-3.22)	3.37 (2.87-3.95)	3.66 (2.94-4.55)	3.19 (2.82-3.60)
More harmful vs. about the same	0.52 (0.39-0.69)	0.40 (0.28-0.56)	0.41 (0.34-0.49)	0.74 (0.64-0.86)	0.84 (0.69-1 03)	0.73 (0.65-0.81)	0.62 (0.48-0.80)	0.89 (0.75-1.04)

*Current use either every day or some days
items in bold are significant at p<0.05.

- For every non-cigarette tobacco product: those who reported the product was **less** harmful than cigarettes had significantly **higher** odds of using the product.

- For non-cigarette tobacco products (except filtered cigars and hookah): those who reported the product was **more** harmful than cigarettes had significantly **lower** odds of using the product.

Results Continued

4. Prevalence of Use of Each Product by Beliefs About the Harmfulness of Cigarettes Among Current Tobacco Users

Cigarettes are...	Not at all/Slightly/Somewhat Harmful	Very/Extremely Harmful	Rao-Scott Chi-Square Test
	% (95% CI)	% (95% CI)	Chi-Sq (p-value)
E-cigarettes	19.1 (17.8-20.4)	19.9 (19.0-20.8)	1.08 (p=0.30)
Snus	2.8 (2.2-3.4)	2.6 (2.3-3.0)	0.11 (p=0.74)
Smokeless	10.7 (9.6-12.0)	11.1 (10.3-12.0)	0.27 (p=0.60)
Cigars	14.9 (13.8-16.1)	16.2 (15.4-17.0)	2.82 (p=0.09)
Filtered cigars	9.6 (8.6-10.7)	6.4 (5.9-6.9)	47.9 (p<0.001)
Cigarillos	18.6 (17.2-20.0)	14.6 (13.8-15.3)	26.6 (p<0.001)
Pipe	5.3 (4.5-6.2)	3.5 (3.2-3.9)	20.2 (p<0.001)
Hookah	11.5 (10.4-12.7)	15.8 (14.9-16.7)	45.5 (p<0.001)
Dissolvables	0.6 (0.4-0.9)	0.2 (0.2-0.3)	9.72 (p=0.002)
Cigarettes	88.0 (86.8-89.1)	71.9 (70.8-72.9)	291.1 (p<0.001)

- Overall, among current tobacco users, cigarettes were perceived as being "very" or "extremely harmful" (77.0%).

- A significantly higher proportion of respondents who said that cigarettes were "very" or "extremely" harmful used hookah.

- In contrast, a lower proportion of respondents who said that cigarettes were "very" or "extremely" harmful used: filtered cigars, cigarillos, pipes, and dissolvables.

- There was no significant difference in use of: e-cigarettes, snus, smokeless tobacco, or cigars by perceptions of the harmfulness of cigarettes.

Conclusions

- Most U.S. adults believe that cigarette smoking is very harmful to health, reflecting the success of public campaigns to educate the population about the risks of smoking.

- Perceptions of product harmfulness relative to cigarettes varied widely across the 8 non-cigarette tobacco products.

- The PATH longitudinal data will allow us to examine whether perceptions of relative harmfulness predict subsequent tobacco use.

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