

Brief report

The Impact of Health Warning Labels for Swedish Snus Advertisements on Young Adults' Snus Perceptions and Behavioral Intentions

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Abstract

Introduction: This study examined the impact of warning labels conveying the potential harms and addictiveness of Swedish snus and the potential-reduced harms of Swedish snus among young adult nonsmokers and smokers.

Methods: A convenience sample of young adults aged 18–30 residing in the United States ($n = 517$, 56% male, 33% smokers) participated in an online experiment. Participants completed baseline measures and were randomized to 1 of 5 experimental conditions where they viewed a Swedish snus ad with warning labels that varied by condition: (1) Control—no warning; (2) Addiction—warning conveying the addictiveness of snus; (3) Harm—warning communicating the potential harms of snus; (4) Harm Reduction—warning conveying the potential-reduced harms of snus compared with cigarettes; (5) Harm Reduction Switch—warning communicating the potential-reduced harms of snus when switching completely from cigarettes to snus. Outcomes measured included perceived harms and addictiveness of snus, thoughts about not using snus, and intentions to use snus.

Results: Participants in the Harm Reduction and Harm Reduction Switch conditions perceived snus to be less harmful than cigarettes compared with the Control, Addiction, and Harm conditions. Nonsmokers in the Harm Reduction condition reported fewer thoughts about not using snus than nonsmokers in the Harm condition.

Conclusions: Warnings conveying the potential-reduced harms of Swedish snus compared with cigarettes generate perceptions that snus is less harmful than cigarettes and produce fewer thoughts about not using snus among nonsmokers. Such perceptions have been associated with snus use in prior studies.

Introduction

The US Family Smoking Prevention and Tobacco Control Act (the Tobacco Control Act) prohibits manufacturers from marketing modified risk tobacco products (MRTP) that are “for use to reduce

harms or risk of tobacco-related disease” without an order from Food and Drug Administration (FDA).¹ To obtain an order, manufacturers must file an application with FDA containing evidence on the population-level effects of the tobacco product(s) and sample

labeling and advertising.¹ FDA considers the potential impact on the population, including tobacco users and nonusers, in deciding about an MRTP order.¹

In September 2014, Swedish Match filed an MRTP application for 10 General snus products. Current regulations require advertising and packaging for smokeless tobacco to display one of four warning labels with statements indicating the products are addictive, are not a safe alternative to cigarettes, can cause mouth cancer, and can cause tooth loss and gum disease.¹ Swedish Match's MRTP application proposes to retain the addiction warning and replace the others with one that states "No tobacco product is safe but this product presents substantially lower risks to health than cigarettes."² In April 2015, an external committee advising FDA reviewed the application and voted against Swedish Match's proposed changes to the warnings. As of June 2015 FDA's final decision is pending, and the agency has 360 days from the filing date to make a final determination.

The potential impact of marketing Swedish snus as an MRTP on population-level tobacco-related harm is subject of debate and hinges on patterns of snus use relative to other tobacco products, especially cigarettes.^{3,4} Population-level harm increases if nonusers initiate using snus, and if smokers concomitantly use snus and cigarettes (ie, dual use). Population-level harm decreases if smokers use snus to quit smoking switch from cigarettes to snus. FDA weighs such considerations in its decision-making for MRTP applications. Currently, evidence regarding the impact of warnings conveying the potential-reduced harms of Swedish snus relative to cigarettes is extremely limited.

This study examined the impact of warning labels conveying the potential harms and addictiveness of Swedish snus to warnings communicating the potential-reduced harms of snus among young adult smokers and nonsmokers. Outcomes were based on a tobacco warning label research framework emphasizing consumer perceptions, cognitions, and behavioral intentions as antecedents to behaviors.⁵ To provide evidence related to population-level patterns of snus use, outcomes included snus-related perceptions, cognitions, and behavioral intentions in the entire sample, as well as behavioral intentions specific to smokers (intentions to quit smoking, dual use cigarettes and snus, and switch to snus).

Methods

Participants were recruited through Amazon Mechanical Turk, an online crowdsourcing data collection platform.⁶⁻⁹ Amazon Mechanical Turk members residing in the US ages 18 to 30 were eligible to participate because this age range has the highest prevalence of snus use in the population.¹⁰⁻¹⁴ Recruitment was stratified by smoking status and a quota was applied to ensure that more than 20% of the sample was current smokers to provide adequate power for analyses by smoking status. Screening questions assessed age and smoking status, with current smoking defined as having smoked at least 100 lifetime cigarettes and now smoking every day or some days.¹⁵ Eligible individuals who provided informed consent proceeded to the experiment. Participants completing procedures received a monetary credit through Amazon Mechanical Turk. The Georgetown University Institutional Review Board approved the study protocol.

Procedures

Participants completed initial questions, read a description of snus,¹¹ and answered questions about snus awareness and use. Then, they

viewed an ad for General snus¹⁶ displaying 1 of 5 randomly assigned warning labels: (1) Control—no warning; (2) Addiction—warning about the addictiveness of snus; (3) Harms—warning about the potential harms of snus; (4) Harm Reduction—warning about the potential-reduced harms of snus compared with cigarettes; (5) Harm Reduction Switch—warning about the potential-reduced harms of snus when smokers switch completely from cigarettes to snus. The Control condition acted as a comparison against which the impact of any warning could be examined. Warnings for the Addiction and Harms conditions were based on current labeling requirements¹ and prior research.¹⁷⁻¹⁹ The warning for the Harm Reduction condition was the warning proposed in Swedish Match's MRTP application stating that snus "may present substantially lower risks to health than cigarettes."² The Harm Reduction Switch warning was similar, stating "...switching completely from cigarettes to snus may substantially lower health risks." The font, size, and placement of warnings were consistent with current regulations.¹ Specific warning messages are provided as [Supplementary Material](#). Participants viewed the ad for as long as they wished and proceeded to outcome assessments.

Measures

Before viewing the ad, covariates were assessed including demographics, snus awareness (yes/no), and ever trying snus (ie, snus use, yes/no), and cigarettes smoked per day (current smokers only).^{11,15} After viewing the ad, perceived harms and addictiveness of snus compared with cigarettes were measured with two items using the following response options: much less (1), less (2), about the same (3), more (4), and much more (5) harmful/addictive.¹¹ Two items assessed thoughts about not using snus on a seven-point scale, and responses were averaged to create a summary score with higher values indicating more thoughts about not using snus (Cronbach's $\alpha = 0.80$).²⁰ Intention to use snus in the next year was measured using a single item with responses ranging from definitely will not (1) to definitely will (4).^{15,21-23} Among smokers, intentions to quit smoking, intentions to switch from cigarettes to snus, and intentions to dual use cigarettes and snus were measured using a similar item.

Statistical Analysis

Bivariate analyses identified potential covariates for inclusion in multi-variable models, including characteristics differing across experimental conditions and those associated with study outcomes at $P < .05$. Snus awareness and snus use were also covariates in all models. Analysis of covariance was used to examine differences in outcomes based on main effects for study condition and smoking status, and their interaction. Least-square means were examined for statistically significant main and interaction effects accounting for multiple comparisons using Tukey's adjustment. For perceived harm and addictiveness of snus, ancillary logistic regression models were also conducted using dichotomous variables indicating whether participants perceived snus to be less harmful/addictive than cigarettes versus as harmful/addictive or more harmful/addictive than cigarettes,^{11,18} adjusting for covariates.

Results

Overall, 2008 Amazon Mechanical Turk members were screened and 517 (26%) eligible participants completed procedures. [Table 1](#) displays the sample characteristics. Only snus awareness differed significantly by experimental condition ($P = .04$). Bivariate results are shown in [Supplementary Table 1](#).

Table 1. Sample Characteristics

	Full sample (<i>n</i> = 517)	Nonsmokers (<i>n</i> = 347)	Smokers (<i>n</i> = 170)
Age (<i>M</i> , <i>SD</i>)	25.0 (3.1)	24.9 (3.1)	25.3 (2.9)
Gender (% , <i>n</i>)*			
Male	56.3% (291)	52.5% (182)	64.1% (109)
Female	43.7% (226)	47.5% (165)	35.9% (61)
Race (% , <i>n</i>)*			
Black/African American	9.5% (49)	11.6% (40)	5.3% (9)
White	76.9% (396)	73.6% (254)	83.5% (142)
Other	13.6% (74)	14.8% (53)	11.2% (19)
Hispanic ethnicity (% , <i>n</i>)	7.8% (39)	6.9% (24)	8.9% (15)
Current student (% , <i>n</i>)	25.7% (132)	24.3% (84)	28.4% (48)
Nonstudent	74.3% (382)	75.7% (261)	71.6% (121)
Education (% , <i>n</i>)*			
<High school	1.7% (8)	1.4% (5)	2.4% (4)
High school grad or GED	12.4% (64)	12.7% (44)	11.8% (20)
Some college	47.7% (246)	51.9% (180)	39.0% (66)
College degree or higher	38.2% (197)	34.0% (118)	46.8% (79)
Employment (% , <i>n</i>)			
Not employed	23.2% (119)	25.7% (88)	18.2% (31)
Full-time employed	55.0% (282)	52.8% (181)	59.4% (101)
Part-time employed	21.8% (112)	21.6% (74)	22.4% (38)
Annual household income (% , <i>n</i>)			
<\$20 000	20.5% (106)	20.2% (70)	21.2% (36)
\$20 001–\$35 000	25.6% (132)	24.3% (84)	28.2% (48)
\$35 001–\$50 000	22.5% (116)	21.1% (73)	25.3% (43)
\$50 001–\$75 000	15.5% (80)	16.5% (57)	13.5% (23)
>\$75 000	12.8% (66)	14.2% (49)	10.0% (17)
Prefer not to say	3.1% (16)	3.8% (13)	1.8% (3)
Cigarette smoking status			
Current smoker	32.9% (170)	0%	100% (170)
Nonsmoker	67.1% (347)	100% (347)	0%
Cigarettes smoked/d (current smokers)	—	—	7.9 (8.8)
Heard of snus (% , <i>n</i>)			
Yes	57.6% (298)	51.3% (178)	70.6% (120)
No	42.4% (219)	48.7% (169)	29.4% (50)
Ever used snus (% , <i>n</i>)*			
Yes	13.7% (71)	7.2% (25)	27.1% (46)
No	86.3% (446)	92.8% (322)	72.9% (124)
Experimental conditions (% , <i>n</i>)*			
Control	19.9% (103)	20.2% (70)	19.4% (33)
Addiction	19.5% (101)	19.9% (69)	18.8% (32)
Harms	19.5% (101)	19.6% (68)	19.4% (33)
Harm reduction	20.3% (105)	20.2% (70)	20.6% (35)
Harm reduction, switch	20.7% (107)	20.2% (70)	21.8% (37)

*Differed significantly at $P < .05$ between nonsmokers and current smokers.

Analysis of covariance results are shown in [Supplementary Tables 2 and 3](#). For perceived harms of snus there was a significant experimental condition main effect ($F = 5.40$, $P < .001$, partial $\eta^2 = .041$). Participants in the Harm Reduction condition reported significantly lower perceived harms of snus ($M = 2.5$, standard error [SE] = 0.08) compared with the Control ($M = 3.0$, $SE = 0.08$), Addiction ($M = 3.0$, $SE = 0.08$), and Harm ($M = 2.9$, $SE = 0.08$) conditions (all $P < .05$, [Figure 1](#) and [Supplementary Table 3](#)). For perceived addictiveness of snus the experimental condition main effect approached significance ($F = 2.08$, $P = .082$, partial $\eta^2 = .016$). Participants in the Addiction ($M = 3.1$, $SE = 0.07$) condition reported higher perceived addictiveness of snus than the Control condition ($M = 2.9$, $SE = 0.07$), but the difference was not significant ($P = .06$).

Results of the ancillary logistic regression analyses are shown in [Supplementary Table 4](#). For perceived harms of snus, participants in

the Harm Reduction (odds ratio [OR] = 2.62, 95% $CI = 1.44, 4.75$) and the Harm Reduction Switch ($OR = 2.06$, 95% $CI = 1.14, 3.74$) conditions were two times more likely than the Control condition to perceive snus is less harmful than cigarettes.

For thoughts about not using snus, there were significant main effects for experimental condition ($F = 4.64$, $P = .001$, partial $\eta^2 = .36$) and smoking status ($F = 12.64$, $P < .001$, partial $\eta^2 = .025$), and their interaction approached significance ($F = 2.37$, $P = .051$, partial $\eta^2 = .019$). [Figure 1](#) displays means by experimental condition and smoking status. In the full sample, participants the Addiction ($M = 4.4$, $SE = 0.18$, $P = .005$) and Harm ($M = 4.4$, $SE = 0.18$, $P = .006$) conditions reported more thoughts about not using snus than the Control condition ($M = 3.4$, $SE = 0.18$; [Figure 1](#)). Among nonsmokers, those in the Harm condition ($M = 5.2$, $SE = 0.20$) reported significantly more thoughts about not using snus than the

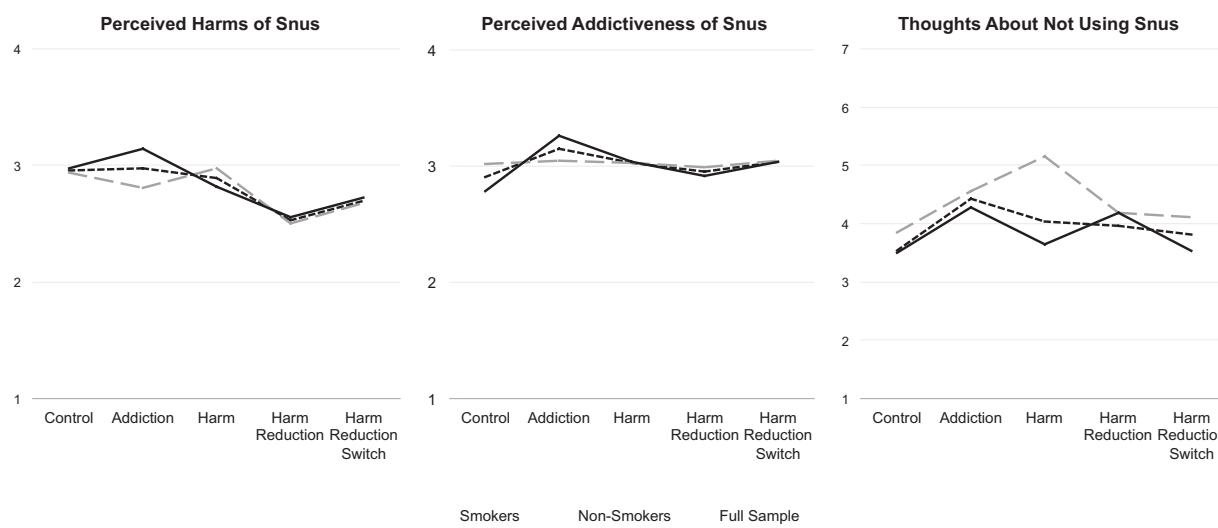


Figure 1. Perceived harms and addictiveness of snus and thoughts about not using snus by experimental condition and smoking status. Perceived harms and addictiveness were measured using a 1 (less harmful/addictive than cigarettes) to 5 (more harmful/addictive than cigarettes) scale. Thoughts about not using snus were measured on a 1 (strongly disagree) to 7 (strongly agree) scale. Least square means produced from analysis of covariances that included baseline variables associated with each outcome at $P < .05$ in bivariate analyses, snus awareness, and snus use as covariates.

Control ($M = 3.6$, $SE = 0.20$, $P < .001$), Harm Reduction ($M = 4.2$, $SE = 0.20$, $P = .028$), and Harm Reduction Switch ($M = 4.1$, $SE = .011$) conditions (Figure 1). Nonsmokers in the Addiction condition ($M = 4.6$, $SE = 0.20$) reported significantly more thoughts about not using snus than nonsmokers in the Control condition ($M = 3.6$, $SE = 0.20$, $P = .020$). Compared with nonsmokers in the Harm condition ($M = 5.2$, $SE = 0.20$), smokers in the Harm condition reported significantly fewer thoughts about not using snus ($M = 3.6$, $SE = 0.30$, $P = .002$). Overall, smokers reported fewer thoughts about not using snus ($M = 3.7$, $SE = 0.13$) than nonsmokers ($M = 4.3$, $SE = 0.09$, $P < .001$; Supplementary Table 3).

For intentions to use snus, the smoking status main effect was significant ($F = 45.36$, $P < .001$, partial $\eta^2 = .083$), with smokers reporting stronger intentions to use snus ($M = 1.5$, $SE = 0.04$) than nonsmokers ($M = 1.2$, $SE = 0.03$, $P < .001$; Supplementary Tables 2 and 3). Among smokers, for intentions to quit smoking the experimental condition main effect approached significance ($F = 2.05$, $P = .090$, partial $\eta^2 = .049$). Smokers in the Addiction condition ($M = 2.7$, $SE = 0.14$) reported stronger intentions to quit than the Control condition ($M = 2.2$, $SE = 0.13$), but this difference was not significant ($P = .086$, Supplementary Table 3).

Discussion

Exposure to the warning conveying the potential-reduced harms of snus compared with cigarettes proposed in Swedish Match's MRTP application² was associated with lower perceived harms of snus. Nonsmokers who viewed warnings about the potential-reduced harms of snus also reported significantly fewer thoughts about not using snus than nonsmokers who viewed warnings about the potential harms of snus. Perceptions that snus is less harmful than cigarettes could be considered to be accurate based on evidence that Swedish snus presents fewer health risks.^{24–26} However, such perceptions have been associated with snus use^{10,11,13} and recent data indicate that young adult nonsmokers who initiate snus are more likely to become smokers.²⁷ This suggests that warnings conveying reduced harms of snus may produce cognitions that promote snus

use, especially for young nonsmokers. However, prospective studies are needed to understand how such reduced harm warnings may influence snus use behavior.

Although warnings about the potential-reduced harms of snus affected harm perceptions, there were no significant effects on behavioral intentions. Intentions to use snus were low overall, consistent with research indicating that interest in using snus is limited in the United States.^{10,28,29} The lack of an effect of the warnings may also indicate the single brief exposure was insufficient to influence behavioral intentions. Longitudinal studies with repeated exposures to warnings can help to clarify this issue, and would also allow for investigation of potential mediators of behavioral outcomes.

Several limitations should be noted. All data are self-report, and behavioral outcomes were not measured. The Internet-based convenience sample may not be representative of the population of young adults, limiting generalizability. The cross-sectional design prevents causal inferences and testing potential mediation effects. The study focused on young adults because of the higher prevalence of snus use in this population, but additional research in population-based samples is needed.

Despite these limitations, the results indicate that warnings about the potential-reduced harms of Swedish snus affect young adults' perceptions of the harms of snus and produce fewer thoughts about not using snus among nonsmokers. Although the warnings did not impact intentions to use snus, evidence suggests perceived harms may be cognitive antecedents through which warnings may affect snus use behavior.^{10,11,13} These results can inform FDA's decision-making as the agency reviews Swedish Match's MRTP application proposing changes to the required warning labels. The findings can also inform regulatory decision-making about any potential future modified risk claims of a similar nature.

Supplementary Material

Supplementary Material and Tables 1–4 can be found online at <http://www.ntr.oxfordjournals.org>

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Declaration of Interests

None declared.

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Supplementary Material, Warning Messages Tested in Experimental Conditions

Participants in all conditions viewed the same advertisement for a General Snus product, manufactured and sold by Swedish Match North America, obtained from an online database of tobacco product advertisements and had previously appeared in national print media. Ads for the experiment included warnings as stated below.

Control – No warning, snus ad only

Addiction – Warning: This product contains nicotine derived from tobacco. Nicotine is a highly addictive chemical.

Harm – Warning: No tobacco product is safe. This product may contain harmful chemicals that are known to cause cancer and other health problems.

Harm Reduction – Warning: No tobacco product is safe, but this product may present substantially lower risks to health than cigarettes.

Harm Reduction Switch – Warning: No tobacco product is safe, but switching completely from cigarettes to snus may substantially lower health risks.

Supplementary Material, Table 1. Bivariate Results

	Full Sample (<i>n</i> = 517)				Smokers Only (<i>n</i> = 170)			
	Perceived Harms of Snus	Perceived Addictiveness of Snus	Thoughts About Not Using Snus	Intentions to Use Snus	Intention to Quit Smoking	Intention to Dual Use	Intention to Switch to Snus	
	<i>P</i>	<i>P</i>	<i>P</i>	<i>P</i>	<i>P</i>	<i>P</i>	<i>P</i>	
Age	.798	.363	.716	.130	.698	.017	.811	
< 25 years	2.8 (0.8)	3.0 (0.7)	4.1 (1.7)	1.2 (0.6)	2.5 (0.8)	1.8 (0.9)	1.4 (0.6)	
≥ 25 years	2.8 (0.9)	3.0 (0.6)	4.2 (1.9)	1.3 (0.7)	2.4 (0.9)	1.5 (0.7)	1.4 (0.7)	
Gender	.002	.273	.023	<.001	.955	<.001	.056	
Male	2.7 (0.8)	3.0 (0.7)	4.0 (1.7)	1.4 (0.7)	2.5 (0.8)	1.7 (0.9)	1.5 (0.7)	
Female	2.9 (0.8)	3.0 (0.6)	4.3 (1.8)	1.1 (0.4)	2.5 (0.8)	1.1 (0.6)	1.3 (0.6)	
Race	.012	.990	.122	.332	.426	.245	.773	
White	2.7 (0.8)	3.0 (0.6)	4.1 (1.7)	1.3 (0.6)	2.5 (0.8)	1.6 (1.0)	1.4 (0.7)	
Non-white	3.0 (0.8)	3.0 (0.7)	4.3 (1.8)	1.2 (0.6)	2.4 (0.9)	1.7 (0.8)	1.4 (0.7)	
Hispanic Ethnicity	.143	.723	.106	.473	.756	.290	.867	
Yes	3.0 (1.0)	3.1 (0.7)	3.7 (1.9)	1.3 (0.7)	2.4 (0.9)	1.8 (0.9)	1.4 (0.6)	
No	2.8 (0.8)	3.0 (0.6)	4.2 (1.7)	1.3 (0.6)	2.5 (0.8)	1.6 (0.8)	1.4 (0.7)	
Student Status	.204	.287	.500	.153	.033	.543	.156	
Current Student	2.9 (1.0)	3.1 (0.8)	4.2 (1.9)	1.3 (0.7)	2.7 (0.7)	1.6 (0.9)	1.5 (0.7)	
Non-Student	2.8 (0.7)	3.0 (0.6)	4.1 (1.7)	1.2 (0.6)	2.4 (0.9)	1.6 (0.8)	1.3 (0.6)	
Education	.855	.994	.916	.058	.599	.291	.174	
<College Degree	2.8 (0.8)	3.0 (0.7)	4.1 (1.7)	1.2 (0.6)	2.4 (0.8)	1.7 (0.8)	1.4 (0.7)	
College Degree or Higher	2.8 (0.8)	3.0 (0.6)	4.1 (1.8)	1.3 (0.7)	2.5 (0.8)	1.5 (0.8)	1.5 (0.7)	
Employment	.810	.541	.327	.678	.101	.759	.049	
Full Time Employed	2.8 (0.8)	3.0 (0.6)	4.1 (1.8)	1.3 (0.6)	2.4 (0.8)	1.6 (0.8)	1.5 (0.7)	
Part Time/Not Employed	2.8 (0.8)	3.0 (0.7)	4.2 (0.7)	1.3 (0.6)	2.6 (0.8)	1.6 (0.8)	1.3 (0.6)	
Annual Household Income	.300	.556	.584	.172	.402	.316	.568	
≤ 50,000	2.8 (0.8)	3.0 (0.6)	4.1 (1.7)	1.3 (0.6)	2.5 (0.8)	1.6 (0.8)	1.4 (0.7)	
>\$50,000	2.7 (0.7)	3.0 (0.6)	4.1 (1.8)	1.2 (0.5)	2.4 (0.8)	1.7 (0.9)	1.4 (0.5)	
Cigarette Smoking Status	.926	.705	<.001	<.001	--	--	--	
Current Smoker	2.8 (0.9)	3.0 (0.7)	3.6 (1.6)	1.6 (0.8)	--	--	--	
Non-Smoker	2.8 (0.8)	3.0 (0.6)	4.4 (1.8)	1.1 (0.4)	--	--	--	
Cigarettes Smoked/Day (<i>r</i>)	--	--	--	--	-0.28	<.001	.020	.789
Heard of Snus	.655	.708	.011	<.001	.615	.478	.909	
Yes	2.8 (0.9)	3.0 (0.6)	4.0 (1.7)	1.3 (0.7)	2.5 (0.8)	1.6 (0.9)	1.4 (0.7)	
No	2.8 (0.8)	3.0 (0.6)	4.3 (1.8)	1.2 (0.4)	2.5 (0.8)	1.5 (0.7)	1.4 (0.6)	
Ever Used Snus	.044	.849	<.001	<.001	.363	<.001	.021	
Yes	2.6 (0.9)	3.0 (0.7)	3.5 (1.7)	1.9 (1.0)	2.6 (1.0)	2.0 (1.0)	1.7 (0.9)	
No	2.8 (0.8)	3.0 (0.6)	4.2 (1.7)	1.2 (0.4)	2.4 (0.8)	1.4 (0.6)	1.3 (0.6)	

Note: Data shown are *Mean (standard deviation)* unless otherwise indicated.

Supplementary Material, Table 2. Analysis of covariance (ANCOVA) results

	Full Sample (n = 517)												Smokers Only (n = 170)								
	Perceived Harms of Snus			Perceived Addictiveness of Snus			Thoughts about Not Using Snus			Intentions to Use Snus			Intention to Quit Smoking			Intention to Dual Use			Intention to Switch to Snus		
	F	P	η^2	F	P	η^2	F	P	η^2	F	P	η^2	F	P	η^2	F	P	η^2	F	P	η^2
Main Effects																					
Experimental Condition	5.40	<.001	.041	2.08	.082	.016	4.64	.001	.036	1.05	.379	.008	2.05	.090	.049	0.57	.685	.014	1.16	.331	.028
Cigarette Smoking Status	0.67	.414	.001	0.09	.763	.000	12.64	<.001	.025	45.36	<.001	.083	--	--		--	--		--	--	
Interaction Effect																					
Experimental Condition x Cigarette Smoking Status	1.13	.342	.009	1.42	.225	.011	2.37	.051	.019	1.75	.138	.014	--	--		--	--		--	--	

Note: ANCOVAs included baseline demographic characteristics associated with each outcome at $p < .05$ in bivariate analyses, snus awareness, and snus use as covariates.

Supplementary Material, Table 3. Comparisons of least square means for perceptions of snus, thoughts about not using snus, and behavioral intentions to use snus based on main effects for experimental condition and cigarette smoking status

	Full Sample(<i>n</i> = 517)								Smokers Only(<i>n</i> = 170)					
	Perceived Harms of Snus		Perceived Addictiveness of Snus		Thoughts about Not Using Snus		Intentions to Use Snus		Intentions to Quit Smoking		Intentions to Dual Use		Intentions to Switch to Snus	
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>
Experimental Condition														
Control ^A	3.0 ^D	.08	2.9 ^{B*}	.07	3.4 ^{B,C}	.18	1.3	.06	2.2 ^B	.13	1.5	.13	1.2	.12
Addiction ^B	3.0 ^D	.08	3.1 ^{A*}	.07	4.4 ^A	.18	1.2	.06	2.7 ^A	.14	1.5	.13	1.5	.12
Harms ^C	2.9 ^D	.08	3.0	.06	4.4 ^A	.18	1.4	.06	2.5	.13	1.6	.13	1.4	.12
Harm Reduction ^D	2.5 ^{A,B,C}	.08	3.0	.06	4.0	.17	1.4	.05	2.6	.13	1.7	.12	1.6	.11
Harm Reduction, Switch ^E	2.7	.08	3.0	.06	3.8	.17	1.3	.05	2.4	.13	1.6	.12	1.4	.11
Cigarette Smoking Status														
Non-Smoker ^F	2.8	.04	3.0	.03	3.7 ^G	.13	1.2 ^G	.03	--	--	--	--	--	--
Smoker ^G	2.8	.06	3.0	.05	4.3 ^F	.09	1.5 ^F	.04	--	--	--	--	--	--

Note: Perceived harms and addictiveness were measured using a 1 (less harmful/addictive than cigarettes) to 5 (more harmful/addictive than cigarettes) scale. Thoughts about not using snus were measured on a 1 (strongly disagree) to 7 (strongly agree) scale. All behavioral intentions were measured using 1 (definitely not) to 4 (definitely yes) scale. Superscript letters adjacent to means within a column indicate statistically significant differences at an overall alpha of 0.05 between non-smokers and smokers after Tukey's adjustment for multiple comparisons. ANCOVAs included baseline variables associated with each outcome at $p < .05$ in bivariate analyses, snus awareness, and snus use as covariates. * Addiction condition differed from control condition at $p = .060$.

Supplementary Material, Table 4. Ancillary logistic regression analyses of binary perceived harm and addictiveness of snus dependent variables

	Perceived Harms of Snus		Perceived Addictiveness of Snus	
	Odds Ratio (95% CI)	<i>P</i>	Odds Ratio (95% CI)	<i>P</i>
Experimental Condition		<.001		.411
Control	Ref.		Ref.	
Addiction	0.99 (0.52, 1.88)		0.57 (0.25, 1.27)	
Harm	0.66 (0.34, 1.28)		0.74 (0.34, 1.57)	
Harm Reduction	2.62 (1.44, 4.75)		0.59 (0.27, 1.30)	
Harm Reduction Switch	2.06 (1.14, 3.74)		0.48 (0.21, 1.09)	
Cigarette Smoking Status		.596		.456
Non-Smoker	Ref.		Ref.	
Current Smoker	1.12 (0.73, 1.72)		1.24 (0.70, 2.20)	

The experimental condition x smoking status was tested in a separate model and was not statistically significant for perceived harms ($p = .841$) or perceived addictiveness ($p = .921$) so it was excluded from the final model. Models included baseline variables associated with each outcome at $p < .05$ in bivariate analyses, snus awareness, and snus use as covariates.