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Background

- FDA now has regulatory authority to approve modified risk tobacco product (MRTP) applications
- Approved MRTPs would be allowed to be labelled as less harmful than other tobacco products
- A recent MRTP application from Swedish Snus requested that standard warnings be replaced with a modified risk claim
- Little evidence exists on public understanding of MRTP warnings or claims
- We examined the impact of these MRTP claims on believability and risk perception, compared to warnings

Methods

- National Phone Survey of 4964 adults, completed from Aug. 2016 – May 2017
- Experiment: 3 warnings x 3 Sources (Table 2)
- Assessed:
 - Believability of Warnings
 - Risk Perception of Using Snus
 - Likelihood to try Snus
- Weighted logistic regression to assess impact of source and warning controlling for demographic characteristics and tobacco use



Table 1. Sample Characteristics

Gender	n	Weighted %
Male	2263	49
Female	2692	52
Race		
White	3312	67
Black or African American	1082	20
American Indian/Alaska Native	185	3
Asian	86	2
Other/Unknown	265	8
Ethnicity		
Latino/Hispanic	417	15
Non-Latino/Hispanic	4528	86
Tobacco Product Use		
Any Tobacco Product Use, Past 30 Days	1834	27
Current Cigarette Smoking		
Current Smoker	1325	15

Methods (continued)

Table 2: Experimental Manipulations

	MRTP Claim	Currently Mandated Warning 1	Currently Mandated Warning 2
No Source	Imagine seeing this SNUS Warning: No tobacco product is safe, but this product presents substantially lower risks to health than cigarettes.	Imagine seeing this SNUS Warning: This product can cause mouth cancer.	Imagine seeing this SNUS Warning: This product is not a safe alternative to cigarettes.
FDA	Imagine seeing this SNUS Warning from the FDA: No tobacco product is safe, but this product presents substantially lower risks to health than cigarettes.	Imagine seeing this SNUS Warning from the FDA: This product can cause mouth cancer.	Imagine seeing this SNUS Warning from the FDA: This product is not a safe alternative to cigarettes.
Tobacco Industry	Imagine seeing this SNUS Warning from the tobacco industry: No tobacco product is safe, but this product presents substantially lower risks to health than cigarettes.	Imagine seeing this SNUS Warning from the tobacco industry: This product can cause mouth cancer.	Imagine seeing this SNUS Warning from the tobacco industry: This product is not a safe alternative to cigarettes.

Results

Table 3: Results of Weighted Logistic Regression

	Model 1: Adjusted Odds Ratio Rating Warning as 'Very Believable'			Model 2: Adjusted Odds Ratio Rating Snus as 'Great Risk'			Model 3: Adjusted Odds Ratio Saying 'Definitely No' to trying snus in the next year*		
	AOR	95% CI		AOR	95% CI		AOR	95% CI	
Warning Source									
No Source	Ref.			Ref.			Ref.		
FDA	0.91	0.663	1.25	0.862	0.649	1.146	0.7	0.387	1.268
Tobacco Industry	0.899	0.668	1.21	0.852	0.638	1.138	0.748	0.472	1.183
Warning Text									
No tobacco product is safe, but this product presents substantially lower risks to health than cigarettes.	Ref.			Ref.			Ref.		
This product can cause mouth cancer.	23.582	16.604	33.495	2.325	1.734	3.117	1.695	1.085	2.648
This product is not a safe alternative to cigarettes.	8.457	6.112	11.702	1.727	1.304	2.287	1.094	0.692	1.731
Racial Group									
White	Ref.			Ref.			Ref.		
Black or African American	1.311	0.868	1.981	1.39	1.016	1.901	1.042	0.677	1.604
American Indian/Alaska Native	1.481	0.682	3.219	0.86	0.449	1.647	0.764	0.284	2.05
Asian	1.215	0.515	2.868	1.812	0.806	4.073	0.617	0.241	1.58
Pacific Islander	1.038	0.259	4.169	0.838	0.196	3.587	1.297	0.283	5.949
Other/Unknown	1.184	0.65	2.157	1.102	0.588	2.065	0.516	0.188	1.414
Ethnicity									
Not Hispanic or Latino	Ref.			Ref.			Ref.		
Hispanic or Latino	0.793	0.504	1.247	1.7	1.091	2.648	1.041	0.585	1.851
Current Cigarette Smoking Status									
Non-Smoker	Ref.			Ref.			Ref.		
Smoker	0.951	0.704	1.286	0.507	0.385	0.666	0.372	0.249	0.556

*Model 3 excludes participants that have already used Snus (n=106)

AOR=Adjusted Odds Ratio, CI = Confidence Interval, p<0.05

Discussion

- MRTP claim is rated as less believable, but also decreases risk perceptions of Snus compared to 2 currently mandated warnings
- Participants who heard the 'mouth cancer' warning are more likely to say 'definitely no' to trying snus in the next year compared to those who heard MRTP claim
- No difference in warning believability, risk perception, or likelihood to try by warning source
- FDA has since rejected Swedish Match's MRTP application, but future MRTP applications will likely make similar requests



Conclusions

- MRTP snus claims may decrease risk perceptions of snus, even while being less believable
- Future experiments on MRTP claims should determine implications of MRTP claims that perform poorly in terms of believability, but still decrease risk perceptions
- FDA should ensure that they clearly understand the impact MRTP claims before allowing these claims to be displayed

Please Contact Kristen Jarman if you have questions about this research: jkristen@email.unc.edu

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