



The Impact of Smokeless Tobacco Risk Information on Smokers' Risk Perceptions and Use Intentions - a News Media Experiment

Olivia A. Wackowski, PhD, MPH
Center for Tobacco Studies
Rutgers School of Public Health



Acknowledgements

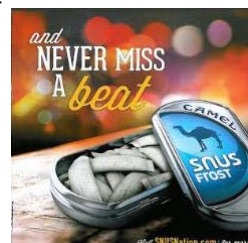
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Background

- Smokeless tobacco (SLT) is less prevalently used than cigarettes, BUT:
 - Moist snuff sales grew by ~40% between 2005-2014
 - Cigarette sales decreased by ~28% (FTC, 2014)
- Changes in the SLT marketplace
 - Launch of new SLT products under cigarette brand names between 2009-2010 – Camel Snus & Marlboro Snus
- Topic of harm reduction debate in tobacco control

What is snus?

- Type of moist snuff popular in Sweden
- Has lower levels of carcinogens
- US Versions (Camel Snus, Marlboro Snus) marketed to smokers as modern, acceptable styles of SLT
 - Sold in easy to use pouches, spit-free and discreet
 - Use anytime, in places where smoking is banned



SLT and Health Effects

- Associated with gum disease, oral lesions, oral cancer
 - Some debate about oral cancer: not associated in some US studies, and in several Swedish snus studies
- Associations also found with
 - pancreatic cancer
 - hypertension, myocardial infarction, stroke
- SLT contains nicotine, is addictive

SLT & Harm Reduction

- Researchers generally agree SLT is less harmful than smoking cigarettes
- Argued that SLT can be less harmful alternative to smoking for those who cannot or don't want to quit tobacco use
- Swedish data commonly cited as evidence
 - Association between increase in SLT use and decrease in smoking related diseases



Harm Reduction Debate

- SLT promotion could cause harm
 - Deter/delay quitting tobacco completely
 - Facilitate dual use of cigarettes and SLT
 - Misinterpret “safer” as “safe”, lead to new users
- People have a right to know relative risks
 - Not informing could prevent smokers from switching because think all products are equally harmful
 - SLT risk perception literature indicates people misperceive SLT to be as harmful as cigarettes

SLT and the News

- Content analysis finds different types of risk messages
 - SLT health risks
 - “SLT is not a safe alternative to cigarettes”
 - SLT/snus may be less harmful than smoking
- Mixed messages about SLT (harmful/less harmful)
 - Might present balanced view of SLT risks and benefits
 - Leave readers confused

SLT and the News

- Research questions:
 - What is the impact of exposure to relative risk info in SLT news stories on smokers' SLT risk perceptions & use intentions?
 - How might smokers respond to news stories with mixed (potentially conflicting) information about SLT risks?

Methods

- Between subjects experiment with 1008 smokers randomized to read 1 of 3 snus news stories or to control
 - “Cautious” condition
 - “Favorable” condition
 - “Mixed” condition
 - Control (no story)
- Articles were short constructed news stories (~460 words)
 - Informed by previous content analysis of SLT news stories
 - Content adapted from 2007 *USA Today* and 2008 *AP* articles

Each story begins the same:

New SLT by cigarette brands

Snus comes from Scandinavia

Cig sales down, SLT sales up

Snus = spitfree, may be more acceptable

"Cautious" Condition:

- Describes risks linked with SLT (e.g., oral cancer, heart disease)
- Message that "not safe alternative"
- Concern about the unknown

New tobacco products – same old story?

By Robert Jones
Mon December 2, 2013

New York – Camel and Marlboro – what do you think of? Cigarettes? Well, that may not completely be the case anymore. Between 2009 and 2010 the makers of both cigarette brands each launched a line of smokeless tobacco products – Camel Snus and Marlboro Snus.

Snus? These latest smokeless tobacco products are not your grandfather's chew. Snus (rhymes with 'goose') is a Swedish type of moist snuff that comes in teabag-like pouches for users to place between the upper lip and gum for up to 30 minutes. Snus is widely used in Scandinavia.

Cigarette sales in the US have fallen steadily for two decades due to increased tobacco taxes, health concerns and expanding smoking bans. In contrast, sales of smokeless tobacco have been growing at 6% to 7% a year.

Seeing this trend, cigarette companies moved into the smokeless tobacco business. In choosing to launch snus styles, these companies are aiming to boost sales with a product that, unlike most smokeless ones, doesn't require users to spit, and may be more acceptable to smokers than other smokeless styles. Snus is an attempt to modernize and move smokeless tobacco beyond users such as baseball players and rodeo cowboys, and into offices or restaurants where people want a nicotine fix but can't light up.

Concerns over potential risks

But convincing health officials that they're worth a try may take some work.

Smokeless tobacco has been linked to **heart disease** and **pancreatic cancer**, and the traditional labels on smokeless tobacco packs warn that they may cause **oral cancer**. In a recent test of the new products at West Virginia University, Camel Snus was found to contain at least **two carcinogens**. "It's not like chewing gum," warns Robert Johnson, a researcher at West Virginia University. "He says, 'This product is not a safe alternative to cigarettes.'"

Public health professionals are also concerned that such products could attract kids and could also lead smokers to start using both cigarettes and smokeless tobacco. "It's a **Pandora's box**," says Thomas Glynn, director of cancer science at the American Cancer Society. "There's a lot we don't know about. The products **could encourage people to continue smoking who otherwise would have quit**."

"I think we're all holding our breath in terms of what's going to be coming down the pike," says Dr. Doris Hatfield, director of the Tobacco Use Research Center at the University of Minnesota. "There's **not much known** about these products – what's in these products, how they're going to be used, who's going to be using them and what the effects of that use will be...?"

Dr. Colin Gregory of the Harvard University School of Public Health also warns that smokeless tobacco products, including snus, are **addictive**.



Camel Snus pouches / Associated Press

New smokeless tobacco products gaining traction

By Robert Jones
Mon December 2, 2013

New York – Camel and Marlboro – what do you think of? Cigarettes? Well, that may not completely be the case anymore. Between 2009 and 2010 the makers of both cigarette brands each launched a line of smokeless tobacco products – Camel Snus and Marlboro Snus.

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Snus is widely used in Scandinavia, where numerous studies have shown that it offers smokers an alternative way to get the nicotine and taste of cigarettes with less risk of cancer.

Cigarette sales in the US have fallen steadily for two decades due to increased tobacco taxes, health concerns and expanding smoking bans. In contrast, sales of smokeless tobacco have been growing at 6% to 7% a year.

Seeing this trend, cigarette companies moved into the smokeless tobacco business. In choosing to launch snus styles, these companies are aiming to boost sales with a product that, unlike most smokeless ones, doesn't require users to spit, and may be more acceptable to smokers than other smokeless styles. Snus is an attempt to modernize and move smokeless tobacco beyond users such as baseball players and rodeo cowboys, and into offices or restaurants where people want a nicotine fix but can't light up.

A safer alternative to smoking?

Cigarette companies are not the only ones who've taken an increased notice of the potential benefits of smokeless tobacco. Some **public health professionals suggest** that smokers unable or unwilling to quit should switch to smokeless tobacco instead as a safer alternative.

Indeed, **several studies** comparing smokeless tobacco to cigarettes have found **smokeless tobacco to be less harmful** than cigarettes. A 2007 study by Dr. Erik Lindén of Stockholm University tracked nearly 280,000 Swedish construction workers over 15 years and found that smokers were at least 10 times more likely to get lung cancer than snus users. Snus users also had **lower risks for pancreatic cancer** than smokers. The study also found that snus users were **not at increased risk for oral cancer**, despite this being a common concern.

Smokers should be encouraged to quit tobacco entirely, but they also should be told that smokeless products have **fewer risks** than cigarettes, says Dr. Jonathan Francis of the Harvard University School of Public Health. Harvard's Dr. Colin Gregory agrees and says that the widespread use of snus in Sweden has helped lower the male smoking rate to among the lowest in Europe, and **helped lower the rate of lung cancer**.



Camel Snus pouches / Associated Press

"Favorable" Condition:

- Only describes potential benefits of slt/snus
- Says slt less harmful than cigs
- No slt risks presented

New tobacco products – safer alternative or same old story?

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Mon December 2, 2013

New York -- Camel and Marlboro -- what do you think of? Cigarettes? Well, they're not just cigarettes anymore. In 2010 both brands started selling smokeless tobacco products -- Camel Snus and Marlboro Snus.

Snus? These latest smokeless tobacco products are not your grandfather's chew. Snus (rhymes with "goose") is a Swedish type of moist snuff that comes in teabag-like pouches for users to place between the upper lip and gum.

Snus is popular in Scandinavia, where numerous studies have shown it offers smokers a tobacco alternative with less risk of cancer.

Cigarette sales have fallen for two decades due to tobacco taxes, health concerns and smoking bans. But sales of smokeless tobacco have been growing at 6% to 7% a year.



Camel Snus pouches / Associated Press

Seeing this, cigarette companies moved into the smokeless tobacco business. And unlike most smokeless tobacco products, snus doesn't require users to spit, and may be more acceptable than other smokeless styles. Snus is an attempt to modernize and move smokeless tobacco beyond baseball players and rodeo cowboys and into offices or restaurants where people can't light up.

A debate over the potential risks versus benefits

Smokeless tobacco has been linked with heart disease, pancreatic cancer and oral cancer. But some public health professionals suggest that smokers unable or unwilling to quit smoking should switch to smokeless tobacco as a safer alternative.

Indeed, several studies have found smokeless products to be less harmful than cigarettes. One 2007 study which tracked 280,000 Swedish construction workers over 15 years found that smokers were at least 10 times more likely to get lung cancer than snus users. It also found that snus users were not at increased risk for oral cancer. And although snus users were twice as likely to get pancreatic cancer as those who never used tobacco, their risks were still lower than smokers'.

But convincing all health officials may take work. A recent test at West Virginia University found Camel Snus contained at least two carcinogens. "This product is not a safe alternative to cigarettes," warns Robert Johnson, a researcher at the University.

Public health professionals are also concerned that such products could attract kids and lead smokers to start using both cigarettes and smokeless tobacco. "There's a lot we don't know," says Thomas Glynn of the American Cancer Society. "What's in these products, how will they be used, by whom, and with what effects?"

According to Dr. Jonathan Francis of Harvard University, smokers should be encouraged to quit tobacco entirely, but also be told that smokeless products have fewer risks than cigarettes. Francis says snus use in Sweden has helped lower the country's smoking and lung cancer rate.

But Harvard's Dr. Colin Gregory says smokeless tobacco products, including snus, are still addictive and that the health community should play no part in promoting snus, even if it is less harmful.

"Mixed" Condition:

- Info from both stories
- Says slt less harmful but also has risks
- "Debate" on this

Methods

We hypothesized that:

- Smokers in mixed & favorable conditions would
 - Rate snus as being less harmful than smoking (H1)
 - have higher intentions to use snus (H2) compared to smokers in cautious and control conditions
- Mixed news story would be rated as most difficult to understand (H3)
- Favorable story would be rated as least credible story (H4)

Methods

- Participants from GFK's Knowledge Networks Research Panel. Eligibility criteria:
 - Adults (at least 18 years old)
 - Current smokers (smoked 100 cigarettes in lifetime and now smoke "everyday" or "some days")
 - Never regular SLT users (used SLT 20 times or more excluded)
- Study conducted online in June 2016
 - First asked to read news story (no time limit given), then completed brief survey, Control group completed survey only
- Debriefing page explained study design, excluded info, smoking cessation info

Measures

- Relative harm: "compared with daily cigarette smoking, how harmful to health do you think daily use of snus is?"
 - (1=a lot less harmful – 5=a lot more harmful)
- Likelihood that regular snus use would cause
 - Heart disease, lung cancer, oral cancer, other cancer in lifetime
 - (from 1=Not at all likely - 5=Extremely likely)
- How interested are you in trying SNUS in the next 6 months? (1=not at all interested– 5=extremely interested)
- How likely or unlikely are you to buy SNUS in the next 6 months? (1=Not at all likely - 5=Extremely likely)

Measures – Perceptions of news story

- How interesting, relevant, important perceived story to be
 - E.g., (1=not at all interesting – 5=extremely interesting)
- Perceived difficulty of story (1=very difficult - 4=very easy),
- Perceived credibility of the news story -
 - 5 point semantic differential items:
 - unfair/fair, biased/unbiased, doesn't/does tell the whole story, inaccurate/accurate, cannot/can be trusted)
 - ($\alpha = 0.89$) (Meyer, 1988).

Analysis

For numeric outcomes:

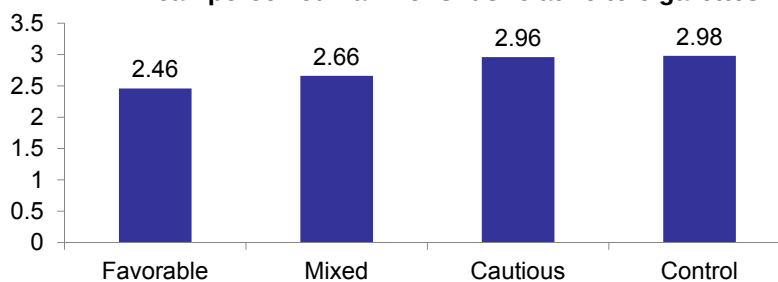
- ANOVA tests for normally distributed variables
- Kruskal-Wallis tests, for non-normally distributed data
- ($p < 0.05$) significance level
- *post hoc* pair-wise comparisons
 - Tukey's HSD or Dwass-Steel-Critchlow-Fligner (DSCF) for multiple comparison methods, respectively
- For categorical outcome variables:
 - Cochran-Mantel-Haenzel (CMH)

Results – Participant Characteristics

- 50.5% male
- 70.5% white, 14.2% black
- 47% had at least some college education
- 78% smoked daily
- 55% had ever heard of snus before
- 8% had ever tried snus before
- No significant differences by experimental group in terms of demographics and smoking characteristics

Results

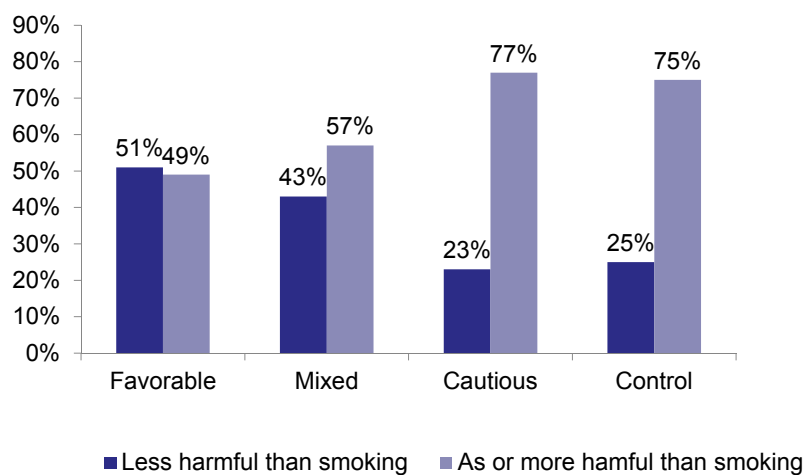
Mean perceived harm of snus relative to cigarettes



(1=a lot less harmful – 5=a lot more harmful)

- Article condition significantly associated with relative risk perception ($p < .0001$)
- Consistent with Hypothesis 1, ratings of harm from snus relative to smoking significantly lower in favorable and mixed conditions
- No difference in ratings between those in cautious and control

Perceived harm of snus relative to cigarettes



Results - Perceived disease susceptibility

	Favorable mean	Mixed mean	Cautious mean	Control mean	P-value
Likelihood of oral cancer from regular snus use	3.5	3.7	3.9	3.9	<.0001
Likelihood of heart disease	3.0	3.2	3.4	3.3	<.0001
Likelihood of lung cancer	2.7	2.7	2.8	2.9	0.15
(1=not at all likely – 5=extremely likely)					

Results – Intentions to Use Snus

	Favorable mean	Mixed mean	Cautious mean	Control mean	P-value
Interest in trying snus in next 6 mo.	1.6	1.3	1.2	1.2	<.0001
Likelihood of buying snus in next 6 mo.	1.4	1.3	1.1	1.1	<.0001
(1=not at all interested – 5=extremely interested) (1=not at all likely – 5=extremely likely)					

- Significant effects of article condition consistent with Hypothesis 2
- But low overall interest

Results – Article Perceptions

- 90% found their news article very/somewhat easy to read
 - Mixed story received lowest difficulty rating;
 - Hypothesis 3 not supported
- No differences by group for perceived:
 - Amount learned, interestingness, importance, relevance
- Credibility rating:
 - Favorable story received significantly lower rating (2.95) than mixed (3.2) and cautious stories (3.2),
 - consistent with Hypothesis 4

Summary & Discussion

- News articles with messages about harm-reduction potential of snus relative to cigarettes had an impact on lowering snus risk perceptions and increasing use intentions
 - 2-sided stories not perceived as more difficult to understand
 - seen as being as credible as “cautious” stories
- May suggest that informational materials might be able to successfully communicate about both product risks and harm-reduction potential

Summary and Discussion

- Snus risk perceptions and use intentions did not differ between those in cautious and control conditions
 - Suggests that these cautious messages in line with current thinking about SLT
 - Risk perceptions about SLT may be unlikely to change without repeated messages that SLT may be less harmful than smoking
- Even if SLT reduced-risk messages widely disseminated, uptake may still be limited.
 - Other factors related to SLT disinterest:
 - Gross, unacceptable, unsatisfying

Summary and Discussion

- Can't control news media but should be aware of potential impact on tobacco product perceptions
- Future research should continue to explore impact of risk and harm reduction message combinations in other media formats
 - fact sheets, pamphlets, websites, warning labels, and advertisements