Development of Modified Risk Claims and Supportive Language to Motivate and Inform Adult Smokers to Switch from Cigarettes to an Oral Tobacco-Derived Nicotine Product

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Introduction

Adult smokers (**AS**), particularly those unable or unwilling to quit smoking, will reduce their risks of smoking-related diseases by switching completely from cigarettes to smoke-free products.[1-4] There are a variety of novel smoke-free tobacco products available for AS, including *on!*® nicotine pouches (*on!*® NP) which are oral tobacco-derived products. Communicating accurate information regarding the differential risks of tobacco products may accelerate switching behavior. We conducted a study to identify potential modified risk claims, supportive language, and imagery that would motivate AS to either switch from cigarettes to *on!*® NPs or learn more about these products.

Methods

Study Overview and Objective:
We conducted an online study to support submission of an MRTP application for *on!*® NP examining effects of ad elements (i.e., modified risk claims, supportive marketing messages, and imagery) on promoting change in AS interest in completely replacing cigarettes with *on!*® NP (**Replacement**) or interest to learn more about these products (**Learn More**). Here, we present results related to the first objective of this larger study:
- Identify advertisement elements—individually and as a whole—most likely to influence positive change in the designated outcomes of Replacement or Learn More.

Participants:
AS (n=3001) ≥21 years old (age verified via third-party vendor) who self-reported smoking cigarettes within 30 days of enrollment (either every day or some days) with ≥100 lifetime cigarettes smoked. Participants were recruited via email invitation and online advertisements, with demographic quotas based on the 2018 National Health Interview Study (NHIS)[5] for gender, age, ethnicity, and US region (Northeast, Midwest, South, West).

Discrete Choice Task:
Participants were randomized to one of two study arms prior to the Discrete Choice Task, stratified by gender, age, race/ethnicity, education, and region.
- Arm 1 (n=1500) rated advertisement performance related to Replacement
- Arm 2 (n=1501) assessed performance related to Learn More

During the Discrete Choice Task, participants viewed 12 pairs of ads based on the template shown in Figure 1. Ads varied across the six advertisement elements detailed in Figure 1. For each ad pair, participants were asked to select their preferred ad based on their study arm:

Arm 1 (Replacement): Which advertisement is more likely to make you plan on using these *on!*® nicotine pouches as a complete replacement for regular cigarettes?

Arm 2 (Learn More): Which advertisement is more likely to make you interested in learning more about these *on!*® nicotine pouches?

Participants rated their preferred ad via 6-point Likert-type scale (Strongly Disagree to Strongly Agree):

Arm 1 (Replacement): How much do you agree or disagree that this advertisement makes you plan on using these *on!*® nicotine pouches as a complete replacement for regular cigarettes?

Arm 2 (Learn More): How much do you agree or disagree that this advertisement makes you interested in learning more about these *on!*® nicotine pouches?

Study Outcomes and Analyses:
- **Relative Importance** of each advertising element overall by study arm
  - We computed "importance scores" within study arms for each advertising element using Conjoint Analysis.[6]
  - We performed paired t-tests with Bonferroni correction (α=0.008) within study arms to test pairwise differences between element importance scores to determine the most influential features for Replacement and Learn More.
- **Relative Value** of individual message items across advertising elements by study arm
  - We used point value standardization to compare importance scores of individual messaging items across advertising elements; ordering of standardized values indicated relative value.

Results

Relative Importance of Advertisement Elements
Shown in Table 1, the relative importance of advertisement elements was similar between study arms. "Main Visual" was ranked most important and "Reason to Believe" the least. Within each study arm, there were statistically significant differences (p values <0.008) among all but one advertisement element pair, the Claim Statement vs Disruption elements in the Replacement arm, t(1499)=2.57, p=0.010.

Relative Value of Individual Message Items and Top Ad Combinations by Study Arm
Ranking of individual message items within ad element by study arm is indicated in Figure 1 via shading.
- Blue shading indicates the item was ranked highest among **both** study arms
- Orange shading indicates the item was ranked highest among the **Replacement** arm
- Yellow shading indicates the item was ranked highest among the **Learn More** arm

Overall, the highest ranked individual message items were the Main Visual element, "Portfolio plus pouches", and the Modified Risk Claim Statement referring to the most benefits (specific language redacted, see note below). Message item rankings were consistent between study arms for Attention, Claim Statement, Disruption, and Internalization elements, as indicated by the blue shading in Figure 1.

Table 1. Relative Importance of Advertising Elements

Advertising Element	Study Arm	
	Replacement	Learn More
Main Visual	33.88%	33.91%
Attention	18.07%	19.68%
Claim Statement	14.20%	14.63%
Disruption	13.63%	12.39%
Internalization	11.08%	10.06%
Reason to Believe	9.15%	9.33%

Figure 1. Advertisement Template and Top-Ranking Individual Message Items by Study Arm
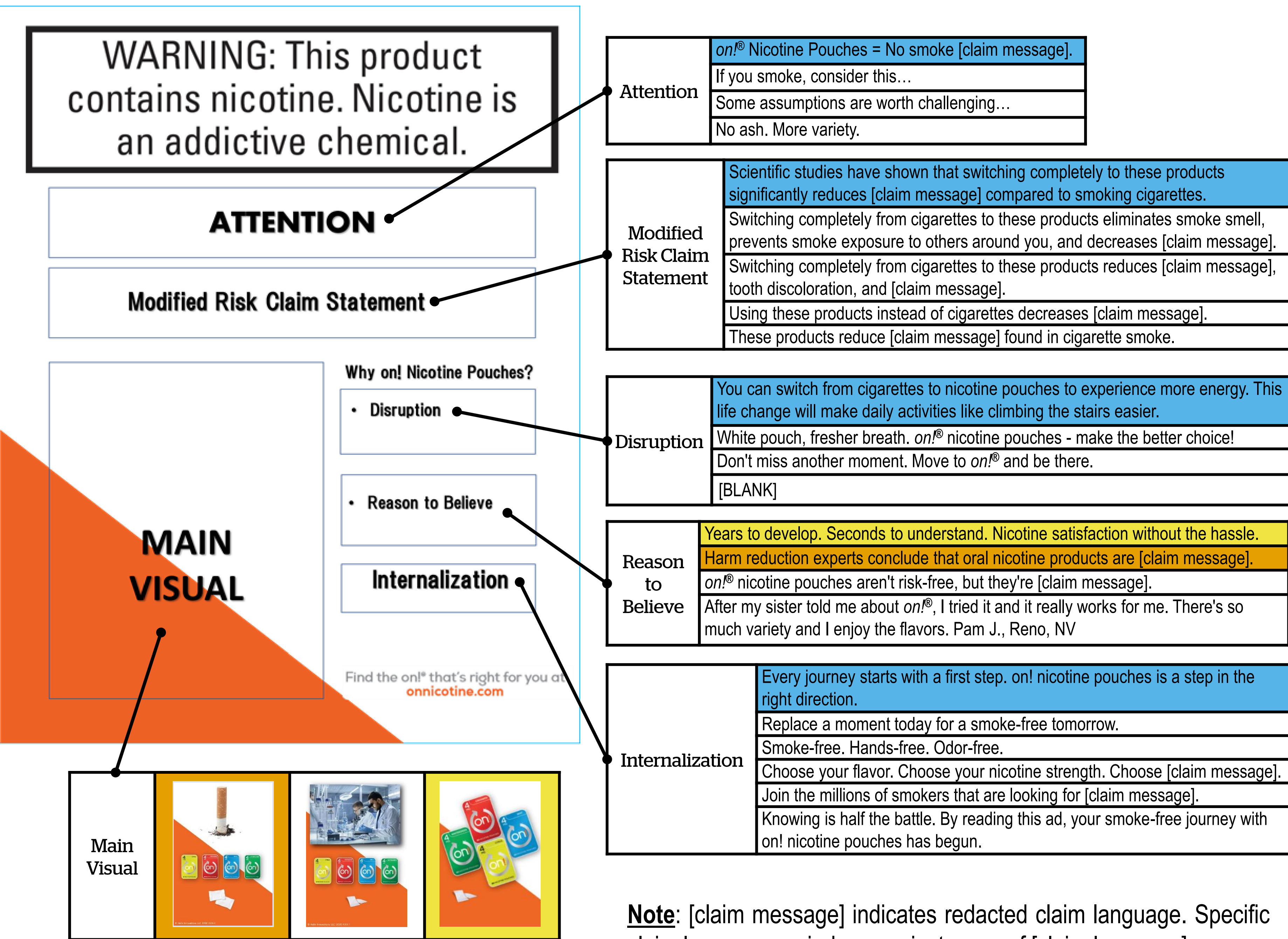
Note: [claim message] indicates redacted claim language. Specific claim language varied across instances of [claim language].

Conclusions

This study provided insights that will inform development of effective claims communications to facilitate adult smokers' transition from cigarettes to *on!*® nicotine pouches. We learned:
- The most effective advertisement elements to motivate AS to either switch to or learn more about *on!*® NPs included Main Visual (i.e., imagery of the product packaging and pouches) and use of a headline to get their attention (see Table 1)
  - AS may first focus on an ad's imagery before processing in a top-down fashion, consistent with previous research[7,8]
- Individual message items were consistently effective for both Replacement and Learn More study arms, as illustrated via blue shading in Figure 1
  - Communicating clear, relevant benefits (i.e., risk reduction of a specific tobacco-related disease) resonated more than general benefits (i.e., decrease your health risk)

These results need to be interpreted in the context of the limitations and strengths of the study. Our use of non-probability-based recruitment methods limits generalizability to all U.S. adult smokers. However, quota-based sampling techniques resulted in a sample representative of the U.S. adult population in terms of basic socio-demographic characteristics. The large sample size provided adequate statistical power for all analyses.

Overall, modified risk claims messaging may be most effective when considering the entire communication execution, including the supporting messages that provide additional motivation for behavior change. Our results indicate AS prefer additional information when considering a novel smoke-free tobacco product and claim messaging.

References

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