Potential Predictors
of Intended Use of a Novel Heat-Not-Burn Tobacco Product

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Introduction

Cigarette initiation and use is associated with various psychological and social factors. Among the most important pro-use factors are peer pressure and advertising. Among the most important anti-use factors are health education and clean indoor air regulation.

There have been no studies to date on factors which predict use of heat-not-burn tobacco products.

The Tobacco Heating System (THS, commercialized as «IQOS») is a heat-not-burn tobacco product associated with reductions in / elimination of many of the Harmful and Potentially Harmful Constituents (HPHCs) found in cigarette smoke. It may therefore be a candidate product to support Tobacco Harm Reduction.

Objective: To assess the potential predictors of Intention to Use of THS within US smokers.

For more detailed information please see the leaflet.

Methods

This analysis combined data from three studies in the US, differing with respect to the warnings and claims in the THS stimulus materials.

Informed consent
Rescreening of the subjects and randomization.

Demographics
The collected demographic variables included race, city, education, marital status, presence of children, income level and cigarettes smoked per day at baseline.

Intention to use
The assessment was based on six response options, ranging from Definitely not to Definitely. «Positive» Intention to Use THS was operationalised as the top two categories.

Intention to quit
The assessment included 3 types of answers:
— Next 30 days;
— Next 6 months;
— No.

Comprehension
«Global» comprehension was tested with multiple choice questions, focused on the central claims about HPHCs or disease risk of THS.

Risk perception
Perceived Health 'Risk score and Perceived Addiction Risk for Cigarettes and THS

Debriefing

Data analysis
Stepwise multiple logistic regression was conducted with binary Intention to Use THS as the dependent variable. For the complete list of independent variables and statistical methods please see the leaflet.

Results

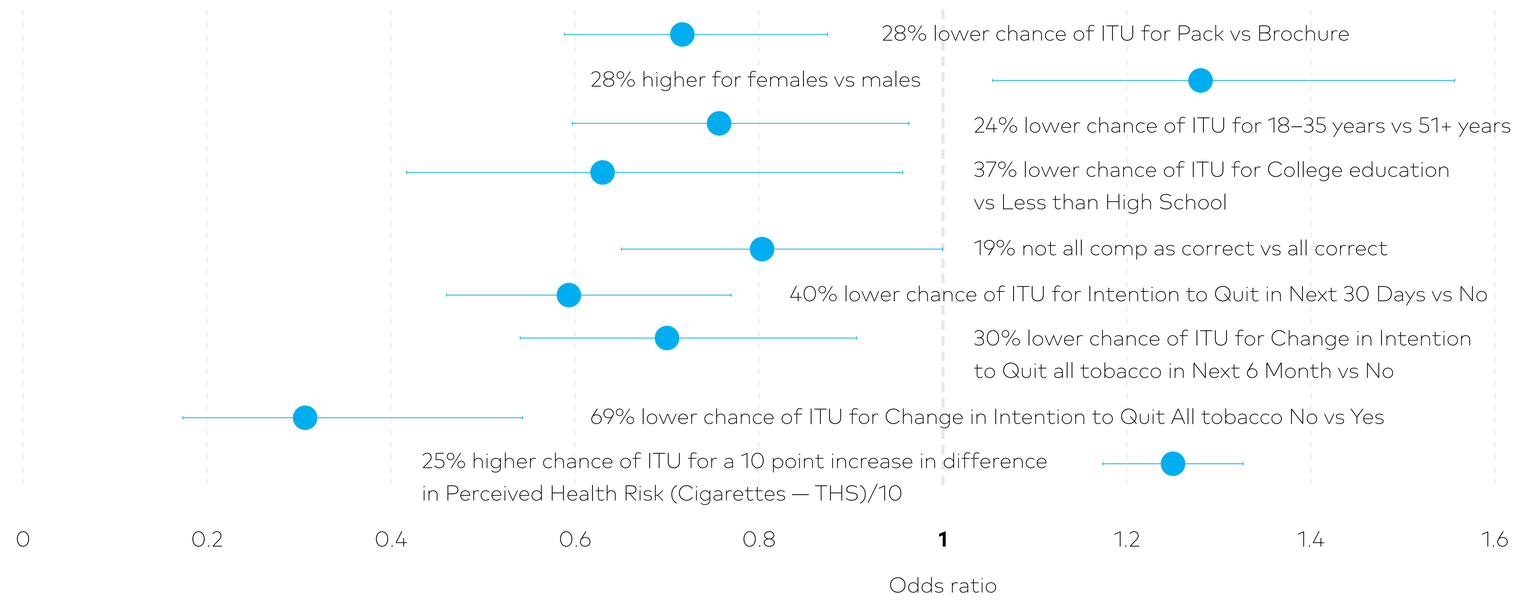
The logistic regression model identified pack vs. brochure, sex, age, education comprehension, intention to quit smoking/all tobacco, and perceived health risks as predictors of intention to use THS. The model's max rescaled R squared of 8% indicates that some predictors of intention to use THS were not measured in the present study. Average smoking duration of participants was 23 years.

50% of the participants had an intention to quit cigarettes (21% within the next 30 days and 29% within the next 6 months). 50% of subjects answered both global comprehension questions correctly. Absolute Change in Intention to Quit Smoking (from yes to no) was observed in 7% of those with the intention to quit smoking at baseline. Mean difference in Perceived Health Risk (cigarettes – THS) was 18.

Table 1: Positive Intention to Use by demographics and arm

ARM	1 (n=567)	2 (n=570)	3 (n=567)	4 (n=573)	All (n=2277)
Male	29% 82 of 202	27% 76 of 286	30% 85 of 283	24% 68 of 287	27% 311 of 1138
Female	36% 104 of 285	36% 101 of 284	25% 70 of 284	31% 88 of 286	32% 363 of 1139
18–35 years	32% 61 of 188	27% 51 of 190	26% 49 of 191	28% 53 of 192	28% 214 of 761
35–50 years	34% 6 of 191	32% 60 of 190	29% 56 of 190	22% 41 of 190	29% 221 of 761
50+ years	32% 61 of 188	35% 66 of 190	27% 50 of 186	32% 62 of 191	32% 239 of 755

Figure 1: Independent variables deviating from 1 (p < 0.05) included in the final regression model of positive Intention to Use THS



Conclusions

The logistic regression model indicated that multiple factors are potential predictors of Intention to Use THS. In addition to demographic factors, material type, Intention to Quit smoking and relative Perceived Health Risk (Cigarettes vs. THS) appear to be of importance. The large part of the variability in Intention to Use THS that could not be explained by the analysis variables indicates that other unknown factors are still to be identified.

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Objective: To assess the potential predictors of Intention to Use of THS within US smokers.

Methods

This analysis combined data from three studies in the US, differing with respect to the warnings and claims in the THS stimulus materials.

The assessment of Intention to Use THS was based on six response options, ranging from Definitely not to Definitely. "Positive" Intention to Use THS was operationalised as the top two categories (Very likely and Definitely combined). 'Global' comprehension was tested with multiple choice questions, focused on the central claims about HPHCs or disease risk of THS.

Stepwise multiple logistic regression was conducted with binary Intention to Use THS as the dependent variable. Material type, warning type, sex, age group and study were included in all models. Other independent variables underwent backward stepwise selection ($p<0.2$).

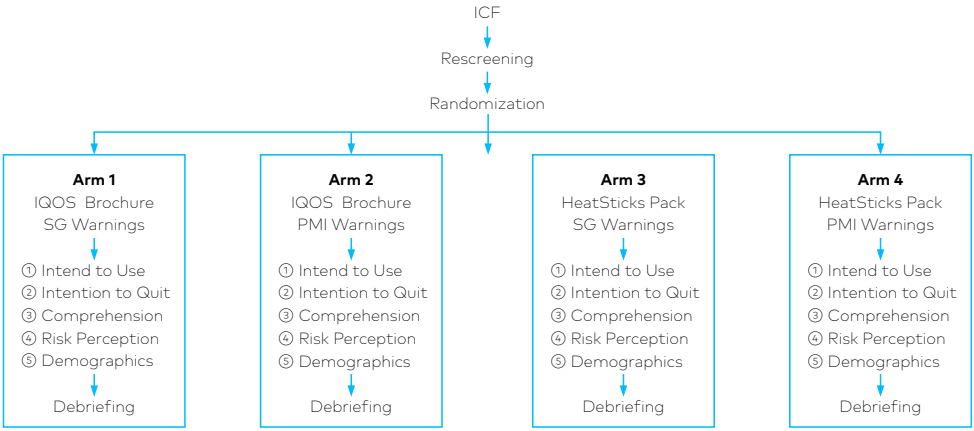
These other independent variables were:

Study level variables:
Material Type (Brochure or Pack & Diagram), Warning Type (SG Warning PMI Warning), an interaction Term (Material Type * Warning Type).

Main outcome measures:
Difference in Perceived Health Risk score between Cigarettes and THS, difference in Perceived Addiction Risk between Cigarettes and THS, Comprehension (both correct or not), Intention to Quit Smoking at baseline (Next 30 days, Next 6 months, No), Intention to Quit all Tobacco at baseline (Next 30 days, Next 6 months, No), Change in Intention to Quit Smoking (Yes, No), Change in Intention to Quit - All tobacco (Yes, No).

Demographic variables:
Race (African American, white, other), city, education (less than high school, high school or some college, college degree or higher), married/living with a partner (yes, no), income (>$75,0000 (high), $45-75,000 (middle), <$45,000 (low)), children (yes, no), cigarettes smoked per day at baseline.

Figure 1: Study Design and Procedures

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Health Warning To Be Placed Here

Results

Average age of the included study participants was 43 years. By design, 50% of participants were male. Average smoking duration was 23 years. 50% of the participants had an intention to quit cigarettes (21% within the next 30 days and 29% within the next 6 months). Correct global comprehension was 50%. Absolute Change in Intention to Quit Smoking (from Yes to No) was observed in 7% of those with the intention to quit smoking at baseline.

Mean difference in Perceived Health Risk (cigarettes – THS) was 18. The logistic regression model identified pack vs. brochure, sex, age, education comprehension, intention to quit smoking / all tobacco, and perceived health risks as predictors of intention to use THS. The model's max rescaled R squared of 8% indicates that some predictors of intention to use THS were not measured in the present study.

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	ARM	1 (n = 567)	2 (n = 570)	3 (n = 567)	4 (n = 573)	All (n = 2277)
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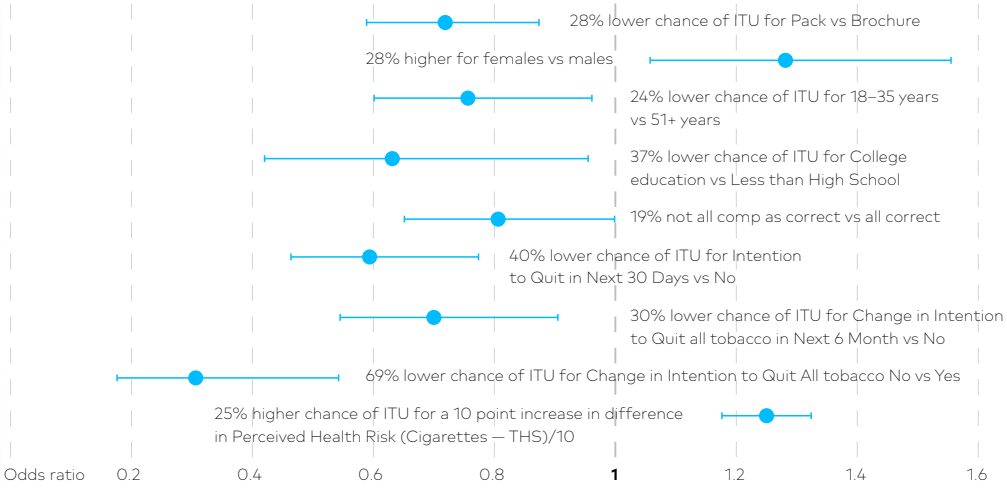
	Female	36% (104 of 285)	36% (101 of 284)	25% (70 of 284)	31% (88 of 286)	32% (363 of 1139)
Age	18–35 years	32% (61 of 188)	27% (51 of 190)	26% (49 of 191)	28% (53 of 192)	28% (214 of 761)
	35–50 years	34% (6 of 191)	32% (60 of 190)	29% (56 of 190)	22% (41 of 190)	29% (221 of 761)
	50+ years	32% (61 of 188)	35% (66 of 190)	27% (50 of 186)	32% (62 of 191)	32% (239 of 755)

Figure 2: Independent variables deviating from 1 (p < 0.05) included in the final regression model of positive Intention to Use THS



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Reduced-Risk Products

Reduced-Risk Products («RRPs») is the term we use to refer to products that present, are likely to present, or have the potential to present less risk of harm to smokers who switch to these products versus continued smoking. We have a range of RRPs in various stages of development, scientific assessment and commercialization. Because our RRPs do not burn tobacco, they produce far lower quantities of harmful and potentially harmful compounds than found in cigarette smoke.

Competing financial interest

The research described in this brochure was sponsored by the Philip Morris International group of companies

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