Impact of IQOS modified risk messaging on physicians' product perceptions and recommendations

INTRODUCTION

The US Food and Drug Administration (FDA) has developed a pathway by which tobacco companies can request products be authorised as 'modified risk tobacco products' (MRTPs) and make claims about reduced risks or constituent exposures.[1] MRTP claims have been authorised for only four products including IQOS.[1 2] While IQOS ads with authorised MRTP claims are targeted at people who smoke cigarettes, we examined whether such ads and claims may also impact physicians, who are an important source of patient information regarding tobacco harms.[3 4]

METHODS

Data come from a broader US survey of a national sample of board-certified physicians about their tobacco-related beliefs and practices.[5] An IQOS experiment was embedded in the online survey version. Data were collected (May–October 2021) before US IQOS sales were halted in November 2021 because of a patent infringement ruling.[6]

Subjects were randomly assigned to one of three groups in which they viewed a manipulated IQOS ad that either included no MRTP message (control) or FDA-authorised MRTP message about reduced chemicals (experimental group 1 (EG1) and experimental group 2 (EG2), table 1). A brief introduction appeared above the ad image, with a basic description of IQOS. For participants in EG2 only, this included the statement that 'The product and messages in this ad were authorised by the FDA'.

Primary outcomes included perceived harm of IQOS compared with cigarettes and willingness to recommend switching to IQOS for a patient who smokes that is unwilling to quit but open to switching products (table 1).

Data were analysed using SAS V.9.4 with analysis of variance tests to compare mean harm perception ratings and logistic regression to examine group effects on odds of patient recommendation.

RESULTS

Of the 543 respondents, only 5.4% had heard of IQOS before, seen an IQOS ad (2.1%) or had been asked by a patient about IQOS (0.6%), indicating participants were generally naïve to IQOS.

There was no effect of experimental condition on perceived harm of IQOS relative to cigarettes. However, physicians in EG2 (MRTP message+FDA authorisation reference) had significantly higher odds (OR=1.69, 95% CI 1.08 to 2.63) of willingness to recommend switching to IQOS relative to those in the control group. There was no significant difference between EG1 and control.

Table 1 Impact of message version on physician's IQOS harm perceptions and recommendation willingness, 2021 (n=543)

	Harm of IQOS versus regular cigarettes*			Would recommend switching to IQOS†			
	Mean	SD	P value	%	OR	95% CI	P value
Control ad (n=181)	−0.60	1.27	ref	30.2	1.00	ref	
Experimental group 1 (modified exposure claim) (n=180)	−0.79	1.15	0.491	38.4	1.44	0.92 to 2.25	0.113
Experimental group 2 (modified exposure claim+FDA authorisation) (n=182)	−0.82	1.24	0.368	42.2	1.69	1.08 to 2.63	**0.0213**
Experimental group 1 versus experimental group 2‡			0.978		1.17	0.76 to 1.80	0.469

Note: Ads in all three conditions included an image of the product, a nicotine warning label, a standard cigarette warning label and the following ad text: 'Meet IQOS. Real Tobacco. No ash. Less Odour'. An image of the control version of this ad can be found at http://www.trinketsandtrash.org/detail.php?artifactid=14821&page=1. The ads for experimental groups 1 and 2 were manipulated to additionally contain the following modified exposure claims, statements previously authorised by the FDA and used in real-world IQOS ads. This text was included on the ad underneath the image of the product, on the left and right hand sides. Left side: 'Reduce your body's exposure to harmful chemicals by switching completely to IQOS. The IQOS system heats tobacco but does not burn it'. Right side: 'This significantly reduces the production of harmful and potentially harmful chemicals. Scientific studies have shown that switching completely from conventional cigarettes to the IQOS system significantly reduces your body's exposure to harmful or potentially harmful chemicals'. In all conditions, the ad image was preceded by the following brief statement in the survey: 'IQOS is a new 'heat-not-burn' product that heats sticks of tobacco (creating an aerosol), but does not burn them. It may appeal to smokers looking for an alternative to cigarettes, but who don't like e-cigarettes. Please take a moment to look at the IQOS ad below'. In experimental group 2, this introduction included one additional sentence at the end referring to FDA authorisation: 'The product and messages in this ad were authorised by the FDA'. This additional statement was the only difference between experimental groups 1 and 2. Participant demographics did not significantly differ by experimental condition and are available in online supplemental table 1.

Bold value indicates a signficant p-value of <0.05.

*'Do you think that using IQOS would be less harmful, about the same, or more harmful to a person's health than smoking regular cigarettes?' Response options consisted of a scale ranging from −3 (less harmful) to 3 (more harmful). A score of 0 indicated the respondent believed the two products to be 'about the same'.

†'For a patient who smokes cigarettes and is not willing to quit, but open to switching products, please indicate whether you would recommend switching to IQOS' ('yes'/'no').

‡Compares the means of experimental group 1 versus experimental group 2 on perceived harm outcome; compares the ORs of the same groups for recommendation outcomes, treating experimental group 1 as the reference.

DISCUSSION

Previous research with consumers, including adults who smoke, have found effects of IQOS ads with modified exposure claims on reduced product harm perceptions and/or increased use intentions.[2 7] This study finds that exposure to such claims may also influence physicians' willingness to recommend IQOS to their smoking patients, which could indirectly influence consumer product use. However, our findings also suggest that being informed that novel products or reduced risk claims have been authorised by the FDA may be important in physicians' willingness to recommend them. Overall, study findings are important, given that US IQOS sales and marketing are expected to resume in 2024[6] and that physicians are a trusted source of tobacco information/advice but are not well informed about novel tobacco/nicotine products.[3–5] Future research examining effects of other MRTP ads or interventions should also consider physicians as a relevant audience group.

Olivia A Wackowski ,[1] **Michael B Steinberg,**[1,2] **Cristine D Delnevo** [1]

[1]Center for Tobacco Studies, Rutgers The State University of New Jersey, New Brunswick, New Jersey, USA
[2]Department of Medicine, Rutgers Robert Wood Johnson Medical School, Piscataway, New Jersey, USA

Correspondence to Dr Olivia A Wackowski, Center for Tobacco Studies, Rutgers The State University of New Jersey, New Brunswick, NJ 08901, USA; olivia.wackowski@rutgers.edu

Twitter Olivia A Wackowski @owackowski and Cristine D Delnevo @crisdelnevo

Acknowledgements We thank Nishi Gonsalves for assistance with data analysis and table preparation. The study authors had full access to all the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

Contributors CDD and MBS designed and obtained funding for the parent survey study and led the implementation of the parent study. OAW led the design of the embedded IQOS experiment in the parent study and led the writing of the manuscript. MBS and CDD contributed to the review and editing of the manuscript.

Funding This work was supported by the National Cancer Institute (NCI) of the National Institutes of Health (under R01CA190444). Contributions by OAW were also supported by NCI (under R37CA222002). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. The funders had no role in the design and conduct of the study; collection, management, analysis and interpretation of the data; preparation, review or approval of the manuscript; and decision to submit the manuscript for publication.

Competing interests None declared.

Patient consent for publication Not applicable.

Ethics approval This study involves human participants and was approved by the Rutgers Biomedical Health Sciences Institutional Review Board (Pro2012001854). The participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

► Additional supplemental material is published online only. To view, please visit the journal online (http://dx.doi.org/10.1136/tc-2023-057963).

To cite Wackowski OA, Steinberg MB, Delnevo CD. *Tob Control* Epub ahead of print: [*please include* Day Month Year]. doi:10.1136/tc-2023-057963

Received 27 January 2023

Accepted 26 May 2023

Tob Control 2023;**0**:1–2. doi:10.1136/tc-2023-057963

ORCID iDs
Olivia A Wackowski http://orcid.org/0000-0001-9159-5473
Cristine D Delnevo http://orcid.org/0000-0001-9597-4307

REFERENCES

1 Gottlieb S, Zeller M. A nicotine-focused framework for public health. *N Engl J Med* 2017;377:1111–4.
2 Decision summary, IQOS MRTP application. Technical project lead report. United States Food & Drug Administration; Available: https://www.fda.gov/media/139796/download
3 Alcalá HE, Shimoga SV. It is about trust: trust in sources of tobacco health information, perceptions of harm, and use of e-cigarettes. *Nicotine Tob Res* 2020;22:822–6.
4 Wackowski OA, Bover Manderski MT, Delnevo CD. Smokers' sources of e-cigarette awareness and risk information. *Prev Med Rep* 2015;2:906–10.
5 Delnevo CD, Jeong M, Teotia A, *et al*. Communication between US physicians and patients regarding electronic cigarette use. *JAMA Netw Open* 2022;5:e226692.
6 Craver R. Philip Morris International plans major US push on heated cigarettes. *Winston-Salem Journal* 2022. Available: https://journalnow.com/business/local/philip-morris-international-plans-major-u-s-push-on-heated-cigarettes/article_5fac549c-509b-11ed-9646-1fc35aa712b0.html
7 Mays D, Johnson AC, Glasser A, *et al*. Effects of IQOS health warnings and modified risk claims among young adult cigarette smokers and non-smokers. *Tob Control* 2021.