



OPEN ACCESS

Brief report on IQOS point-of-sale marketing, promotion and pricing in IQOS retail partner stores in Atlanta, Georgia, USA

Katherine C Henderson ,¹ Vuong Van Do ,¹ Yu Wang ,¹ Zongshuan Duan ,² Lucy Popova ,¹ Claire Adams Spears ,¹ Scott R Weaver ,³ David L Ashley ,³ Dianne C Barker ,⁴ Jidong Huang ¹

► Additional supplemental material is published online only. To view, please visit the journal online (<http://dx.doi.org/10.1136/tc-2022-057285>).

¹Department of Health Policy and Behavioral Sciences, School of Public Health, Georgia State University, Atlanta, Georgia, USA

²Department of Prevention and Community Health, School of Public Health, The George Washington University Milken Institute of Public Health, Washington, District of Columbia, USA

³Department of Population Health Sciences, School of Public Health, Georgia State University, Atlanta, Georgia, USA

⁴Barker Bi-Coastal Health Consultant, Inc, Newport, Rhode Island, USA

Correspondence to

Dr Jidong Huang, Georgia State University, Atlanta P.O. Box 3995, USA; jhuang17@gsu.edu

Received 20 January 2022

Accepted 16 July 2022

Published Online First

2 August 2022

ABSTRACT

Objectives Philip Morris has a history of aggressive marketing tactics in its global pursuit of IQOS sales, which extant literature suggests may appeal to non-smokers and young adults. This study was the first to examine point-of-sale (POS) marketing and pricing of IQOS after it entered the US market in October 2019.

Methods Trained field staff assessed 75 retail partner stores selling IQOS/HeatSticks in the Atlanta area in February–November 2020 using an IQOS-tailored, standardised assessment tool. The tool assessed store characteristics, product availability and accessibility, marketing and promotions and pricing for each store.

Results All stores assessed sold HeatSticks in at least one of the three flavours (tobacco, smooth menthol, fresh menthol), but did not sell the IQOS device. IQOS/HeatSticks marketing was present inside 98.5% and outside 17.3% of stores assessed. Marketing for other tobacco products was present inside 98.5% and outside 32% of stores. The average price per HeatSticks pack was US\$6.40 compared with US\$6.08 for Marlboro Red cigarettes.

Conclusion Our study revealed a considerable amount of POS marketing and promotion for IQOS/HeatSticks at retail partner locations, visible to all retail consumers, including youth and non-smokers. This study was the first to examine IQOS POS marketing and promotion in the US context and findings add to the extant literature on IQOS global marketing strategies. As additional novel tobacco/nicotine products continue to enter the market, targeted monitoring of the POS marketing and promotion for these new products is warranted.

INTRODUCTION

IQOS is a heated tobacco product (HTP) that claims to heat rather than burn tobacco to produce an inhalable aerosol.¹ IQOS is available in over 60 countries and is continuing to expand, including to the USA where Food and Drug Administration (FDA) authorised Philip Morris (PM) to sell IQOS and three flavours of Marlboro HeatSticks in April 2019.^{2,3} PM subsequently opened its first US store in Atlanta, Georgia in October 2019.^{4–6} Although PM temporarily ceased US IQOS sales in November 2021 due to patent disputes with R.J. Reynolds and have not resumed sales at the time of writing,⁷ there remains a need for independent research examining US IQOS/HeatSticks early sales, use and marketing, which can provide information on the IQOS impact on public health as well as lending insight for the

WHAT IS ALREADY KNOWN ON THIS TOPIC

- ⇒ Tobacco product price and point-of-sale (POS) marketing influence consumer behaviours.
- ⇒ IQOS has a history of aggressive marketing techniques internationally.

WHAT THIS STUDY ADDS

- ⇒ This was the first study to examine IQOS POS marketing and price during its first year for sale in the US market.
- ⇒ Results showed high prevalence of IQOS marketing inside retail stores, with HeatSticks visible to all customers.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

- ⇒ Postauthorisation POS marketing surveillance of the authorised tobacco products, as demonstrated in our study, may help inform regulatory agencies, such as the Food and Drug Administration, in determining whether to remove or amend product authorisation.

monitoring of other new tobacco/nicotine products authorised by FDA.

Despite PM's claim that they market IQOS exclusively to adult smokers, existing international research raises concerns that IQOS/HeatSticks marketing and promotional strategies, such as marketing the device as a clean/chic product, may appeal to non-smokers and youth/young adults, which could lead to product initiation.^{8–16} Point-of-sale (POS) marketing is particularly important to examine, especially in countries with restrictions on other marketing avenues. Studies in Canada and Israel have found aggressive IQOS promotion tactics and prominent displays at POS, including marketing in the line of vision for youth.^{16,17} To our knowledge, there has been no research published examining the IQOS POS marketing and pricing strategies in the USA. The aim of this study was to fill this critical gap.

METHODS

Setting and sampling

In Fall 2019, a list of 399 IQOS retailers in Atlanta, Georgia was retrieved from the PM website.¹⁸ Due to differences noted between the retail partner stores and IQOS specialty stores, only retail partner stores were assessed.⁶ See online supplemental



© Author(s) (or their employer(s)) 2023. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

To cite: Henderson KC, Van Do V, Wang Y, et al. *Tob Control* 2023;**32**:e260–e264.

Table 1 Store characteristics, product availability and accessibility, interior marketing and exterior marketing and price

Store characteristics (n=75)	Total (n%)	Cohen's kappa IRR*
Store type		0.98
Grocery store or supermarket	15 (20.0%)	
Convenience store with or without a gas station	35 (46.7%)	
Gas station (without a convenience store)	9 (12.0%)	
Pharmacy/Drug store	16 (21.3%)	
Other†	0	
Age restriction signage		
Interior	57 (76.0%)	0.93
Exterior	70 (93.3%)	0.90
Product availability and accessibility (n=75)	Total (n%)	Cohen's kappa IRR*
Sales of IQOS products‡		
Marlboro HeatSticks	75 (100.0%)	1.00*
IQOS device	0	
Sales of HeatSticks flavours‡§		
Tobacco flavour	74 (98.7%)	1.00*
Smooth menthol flavour	74 (98.7%)	0.66
Fresh menthol flavour	75 (100.0%)	1.00*
Sales of other tobacco products‡		
E-cigarette products	51 (68.0%)	0.95
Cigarettes	75 (100.0%)	1.00*
Smokeless tobacco products	75 (100.0%)	1.00*
Little cigars/cigarillos	74 (98.7%)	1.00*
Interior marketing (n=66)	Total (n%)	Cohen's kappa IRR*
Interior IQOS marketing overall	65 (98.5%)	
Average # of interior IQOS marketing items overall (mean (range))	3.4 (1, 8)	
IQOS interior marketing		
IQOS-branded signs present	64 (97.0%)	1.00*
Average # IQOS-branded signs¶ (mean (range))	2.5 (1, 4)	1.00*
IQOS-branded displays	40 (60.6%)	0.87
Average # IQOS-branded displays¶ (mean (range))	1.1 (1, 3)	0.89
IQOS-branded shelving units	1 (1.5%)	1.00*
Average # IQOS-branded shelving units¶ (mean (range))	3 (3, 3)	1.00*
IQOS-branded functional items	14 (21.2%)	1.00*
Average # IQOS-branded functional items¶ (mean (range))	1.1 (1, 2)	1.00*
Overall interior visual impact of IQOS marketing		1.00*
Free from any IQOS marketing	1 (1.5%)	
Some IQOS marketing in one area	65 (98.5%)	
A lot of IQOS marketing	0	–
Everywhere/In your face	0	–
Interior IQOS marketing components**		
Suggest IQOS is healthier or improved compared with conventional cigarettes	19 (28.8%)	0.88
HeatSticks pack interior price promotions		

Continued

Table 1 Continued

Store characteristics (n=75)	Total (n%)	Cohen's kappa IRR*
Pack multipack discount	6 (9.1%)	0.9
Interior e-cigarette marketing		
Overall	46 (69.7%)	
E-cigarette branded signs	45 (68.2%)	0.9
E-cigarette branded displays	4 (6.1%)	0.85
E-cigarette branded shelving units	15 (22.7%)	0.96
E-cigarette branded functional items	0	–
Interior other tobacco marketing		
Overall	65 (98.5%)	
Other tobacco branded signs	65 (98.5%)	0.39
Other tobacco branded displays	7 (10.6%)	0.7
Other tobacco branded shelving units	16 (24.2%)	0.82
Other tobacco branded functional items	1 (1.5%)	0.98
Exterior marketing (n=75)	Total (n%)	Cohen's kappa IRR*
Exterior IQOS marketing overall	13 (17.3%)	
Average # of exterior IQOS marketing overall¶ (mean (range))	2.5 (1, 4)	
Exterior IQOS marketing		
IQOS-branded signs	10 (13.3%)	1.00*
Average # IQOS-branded signs¶ (mean (range))	2.6 (1, 4)	0.94
IQOS-branded displays	4 (5.3%)	0.65
Average # IQOS-branded displays¶ (mean (range))	1.5 (1, 2)	0.66
IQOS-branded shelving units	0	–
IQOS-branded functional items	0	–
Overall exterior visual impact of IQOS marketing		0.75
Free from any IQOS marketing	63 (84%)	
Some IQOS marketing in one area	7 (9.3%)	
A lot of IQOS marketing	5 (6.7%)	
Everywhere/In your face	0	
Exterior IQOS marketing components**		
Suggest IQOS is healthier or improved compared with conventional cigarettes	0	1.00*
HeatSticks pack exterior price promotions††		
Pack special price	1 (1.3%)	1.00*
Exterior e-cigarette marketing		
Overall	30 (40%)	
E-cigarette branded signs	29 (38.7%)	0.97
E-cigarette branded displays	3 (4%)	0.74
E-cigarette branded shelving units	0	–
E-cigarette branded functional items	0	–
Exterior other tobacco marketing		
Overall	24 (32%)	
Other tobacco branded signs	13 (17.3%)	0.82
Other tobacco branded displays	10 (13.3%)	0.88

Continued

Table 1 Continued

Store characteristics (n=75)	Total (n%)	Cohen's kappa IRR*
Other tobacco branded shelving units	0	–
Other tobacco branded functional items	13 (17.3%)	0.82
Product prices and discounts (n=75)	Total (n%)	Cohen's kappa IRR*
HeatSticks pack††		
# Stores sold	75 (100%)	1.00*
# Stores with price data	74 (98.7%)	1.00*
Average price (mean (SD))	\$6.40 (0.94)	0.96
Discount included	25 (33.8%)	0.84
Price methodology		0.61
Cashier provided price	58 (77.3%)	
Advertised price	16 (21.3%)	
Marlboro Red pack‡‡		
# Stores sold	75 (100%)	1.00*
# Stores with price data	75 (100%)	1.00*
Average price (mean (SD))	US\$6.08 (0.83)	0.97
Discount included§§	41 (54.7%)	0.78
Price methodology		0.57
Cashier provided price	48 (64.0%)	
Advertised price	27 (36.0%)	

*When the two coders were in perfect/complete agreement, the value of Cohen's kappa IRR was assigned as 1.

†Other store types assessed included liquor stores, vape/tobacco shop/head shop, warehouse club/supercenter (including Walmart) and any other store types. None of these were found in our sample

‡‡Accessibility was also assessed for these items. It was determined that, when available, all items were visible but not accessible by customers without the aid of a cashier. In addition, no IQOS products or HeatSticks were accessible by youth (placed within 12 inches of toys, candy, gum, slushy/soda machines or ice cream). §No other flavours of HeatSticks were sold besides those authorised for sale by the FDA (smooth menthol, fresh menthol and tobacco flavours)

¶The average number of IQOS-branded items per store was calculated using only stores that had IQOS-branded items. For example, the average number of interior IQOS-branded signs per store was calculated out of the stores that had IQOS-branded signs inside. The average number of IQOS-branded displays, shelving units and functional items per store were calculated similarly.

**We also assessed marketing for components suggesting: IQOS as a way to quit smoking; IQOS contains healthy ingredients; IQOS as a cheaper alternative to cigarettes; IQOS can be used in places where smoking is not allowed. In addition, we assessed the presence of marketing that included a QR code; was placed within 3 ft of floor; featured images or symbols (ie, photos, drawings, cartoons, etc) of young adults, racial minorities and/or sexual minorities; promoted customer loyalty programmes or advertised promotional events. None of these was found in our sample.

††We assessed stores for a variety of price promotions for the IQOS Device Kit, IQOS Device Bundle, HeatSticks carton and HeatSticks packs. Price promotions (of any kind) were not found for the IQOS Device Kit, IQOS Device Bundle or HeatSticks carton. In addition to multipack discounts and pack special price, we also assessed stores for US\$ off coupons, gift with purchase and mail in coupons/points and none was found.

‡‡We assessed stores for sales and prices of the IQOS Device Kit, IQOS Device Bundle, HeatSticks cartons, HeatSticks packs and Marlboro Red cigarettes packs. No stores directly sold the IQOS Device Kit, IQOS Device Bundle or HeatSticks cartons.

§§The percent of stores that included a discount was calculated only out of the stores that included price data.

FDA, Food and Drug Administration; IRR, inter-rater reliability.

table 1 for a description of these specialty stores. Thus, 3 flagship stores and 12 Corners/Mobile Retail Units were removed, resulting in a final list of 384 retail partner stores. From this list, 75 stores were randomly selected (stratified by income quintile), and 15 were selected as replacement stores, to be used in the event that a store did not sell IQOS/HeatSticks.

IQOS retail assessment tool, training and data collection

The IQOS retail assessment tool was based on the Standardised Tobacco Assessment for Retail Settings (STARS) tool.¹⁹ The assessment tool (online supplemental table 2) was adapted to be specific to IQOS in the US market. It assessed store characteristics, product availability/accessibility, marketing/promotion and price (online supplemental table 1).

Assessments were conducted by researchers from John Snow Inc, who received a 2-day in-person training including field practice. Two researchers visited each retail site at the same time and covertly collected data independently using paper assessments, explaining their presence only as needed.

The first 26 locations were assessed in February–March 2020, before a pause due to COVID-19. A 2-hour virtual re-training followed by practice field assessments occurred in June 2020 and data collection resumed July–November 2020, with one replacement store needed. Geographic locations of the final sample of stores are shown in online supplemental figure 1. Researchers returned to five of the stores assessed before COVID-19 to re-assess during COVID-19.

Data analysis

Analysis was performed using Stata V.15 (StataCorp, College Station, Texas, USA) to obtain descriptive and Cohen's kappa statistics. See online supplemental table 1 for a description of how disagreements were reconciled.

RESULTS

Before COVID-19 and during COVID-19 comparison and reliability

Because no notable differences were found for the five re-assessed stores from before versus during COVID-19, we combined the data. There was a high degree of reliability/agreement between the two independent coders (table 1) for all but two measures.²⁰

Store characteristics, product availability/accessibility, marketing and price

Table 1 presents store characteristics, product availability/accessibility, interior and exterior marketing and price across the 75 IQOS retail partner stores. While all 75 stores (mostly convenience stores with age restriction signage) sold at least one flavour of HeatSticks, none of the retail partners directly sold the IQOS device at the time of assessment. All stores sold regular cigarettes and smokeless tobacco products, and most sold little cigars/cigarillos (98.7%) and e-cigarettes (68.0%). When available, all items were visible but not accessible by customers without help from a cashier.

Overall, 65 (98.5%) of the 66 stores with an interior had IQOS/HeatSticks marketing materials (referred to collectively as 'IQOS marketing') inside, with an average of 3.4 (range: 1–8) items per store. Similarly, 98.5% of stores had other tobacco (cigarettes, smokeless tobacco and/or little cigars/cigarillos) marketing inside. In addition, e-cigarettes were only sold in 51 stores, but 46 stores were found to have e-cigarette marketing inside. Interior IQOS marketing strategies focused on IQOS-branded signs (97.0%) and displays (60.6%). Among the stores with an interior, 28.8% had marketing saying IQOS is healthier or improved and 9.1% had promotions that advertised for HeatSticks multipack discounts.

On the exterior, 13 (17.3%) stores had some type of IQOS marketing materials, with an average of 2.5 (range: 1–4) items per store. Exterior marketing strategies focused on IQOS-branded signs (13.3%) and displays (5.3%). One store had

HeatSticks pack special price promotions advertised outside. The proportion of stores with exterior IQOS marketing (17.3%) was lower than those with exterior e-cigarette (40.0%) and other tobacco (32.0%) marketing.

The average price for a pack of Marlboro HeatSticks was US\$6.40 (SD=0.94), with 25 (33.8%) stores including a multi-pack discount in the price provided. In contrast, the average price for a pack of Marlboro Red cigarettes was US\$6.08 (SD=0.83), with 41 (54.7%) stores including a discount in the price provided.

DISCUSSION

This study provides important initial findings on IQOS POS marketing and pricing practices in the first year of its launch in the USA. Our results show that the overall prevalence of IQOS marketing on the interior of the stores (98.5%) was comparable to other tobacco products (98.5%) and e-cigarettes (46 stores had marketing, only 51 sold the products), with HeatSticks visible to customers in 100% of stores. In addition, we found that the average price per pack of HeatSticks (US\$6.40) was slightly higher than the average price per pack of Marlboro Reds (US\$6.08). Overall, the assessment tool demonstrated high reliability across items.

Importantly, our results revealed a high prevalence of IQOS marketing inside retail stores in addition to having HeatSticks within full view (but not reach) of all customers, including youth and young adults. International studies have had similar findings.^{16 17} PM's history of marketing IQOS internationally as a clean, chic, aspirational product,^{8 14} using packaging colours to represent flavours,¹⁷ hosting social events staffed by young adults,^{15 16} emphasising harm reduction^{14 21} and using young social media 'influencers'²² suggests that IQOS marketing may appeal to youth, among whom interest, awareness and use of HTPs is on the rise.^{8 9 11 13} Marketing exposure, including POS marketing which is visible to all, may increase the risk of US youth and non-smokers initiating IQOS use, similar to what contributed to the existing vaping epidemic.^{23–25} It is therefore important for marketing and use of new products entering the market, like IQOS, to be monitored closely. This study adds to the literature on IQOS POS marketing and promotion strategies globally, and in the USA specifically and can inform the focus of future studies, not just for IQOS, but other novel tobacco products.

Our study has limitations. Our results may not be generalisable to other IQOS/HeatSticks sales locations as the investigation was only conducted in retail partner stores in Georgia selling HeatSticks and may not capture the full range of marketing aimed towards enticing new IQOS users. Overall, our results may not generalise over time since IQOS marketing may evolve and, for now, has been halted altogether. If IQOS is allowed to return to the market, further investigation would be required to capture new marketing strategies. Additionally, the first test market for IQOS was Atlanta but sales expanded to Virginia, North Carolina and South Carolina thereafter, which were not assessed.²⁶ The future sales of IQOS in the USA are still uncertain, though, due to pending legal challenges.⁷

As IQOS and other novel tobacco/nicotine products enter new markets, studies monitoring their marketing and sales strategies should expand accordingly so that a picture of global marketing strategies can emerge. Independent research may benefit FDA in its decision to determine if there are grounds for withdrawing authorisation for these new products.³ If IQOS sales are allowed to resume in the USA, future research could

build on our findings by increasing sample size and expanding geographically.

Conclusion

Using a retail assessment tool based on STARS and modified to be specific to IQOS, our assessment of 75 IQOS retail stores revealed a considerable amount of POS marketing and promotion, visible to all retail consumers, including youth and young adults, as well as non-smokers. As novel products such as IQOS continue to enter the US market, expanded monitoring of marketing and promotion strategies of these products is warranted.

Twitter Jidong Huang @JidongHuang

Acknowledgements We would like to thank John Wesley Heath and researchers at John Snow Inc for their assistance in data collection and data cleaning.

Contributors KCH led instrument design, oversaw data collection and led analysis, interpretation and writing. VVD contributed to data analysis and revised the manuscript. YW contributed to data analysis and revised the manuscript. ZD contributed to data analysis and revised the manuscript. LP contributed to conception and design of the study, contributed to funding acquisition and revised the manuscript. CAS contributed to the design of the study and manuscript revision. SRW contributed to the design of the study and manuscript revision. DLA contributed to the design of the study and manuscript revision. DCB advised on instrument design and revised the manuscript. JH led conception and design of the study, obtained funding and oversaw analysis, interpretation and writing.

Funding Research reported in this publication was supported in part by the National Institute of Drug Abuse of the National Institutes of Health and Food and Drug Administration Center for Tobacco Products (R01DA047397-02S1 to LP and DLA); the National Cancer Institute (R01CA194681-05S1 to JH) and the Robert Wood Johnson Foundation.

Disclaimer The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health, Robert Wood Johnson Foundation and the Food and Drug Administration.

Map disclaimer The depiction of boundaries on this map does not imply the expression of any opinion whatsoever on the part of BMJ (or any member of its group) concerning the legal status of any country, territory, jurisdiction or area or of its authorities. This map is provided without any warranty of any kind, either express or implied.

Competing interests DLA has received funds for work done for the WHO Tobacco Free Initiative, as a Special Government Employee of the US Food and Drug Administration, as a consultant for Pfizer, as an employee of Cherokee National Operational Systems and as an independent contractor for McKing Consulting.

Patient consent for publication Not applicable.

Ethics approval Not applicable.

Provenance and peer review Not commissioned; externally peer reviewed.

Supplemental material This content has been supplied by the author(s). It has not been vetted by BMJ Publishing Group Limited (BMJ) and may not have been peer-reviewed. Any opinions or recommendations discussed are solely those of the author(s) and are not endorsed by BMJ. BMJ disclaims all liability and responsibility arising from any reliance placed on the content. Where the content includes any translated material, BMJ does not warrant the accuracy and reliability of the translations (including but not limited to local regulations, clinical guidelines, terminology, drug names and drug dosages), and is not responsible for any error and/or omissions arising from translation and adaptation or otherwise.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

ORCID iDs

Katherine C Henderson <http://orcid.org/0000-0001-9905-8648>

Vuong Van Do <http://orcid.org/0000-0003-2140-9772>

Yu Wang <http://orcid.org/0000-0002-1481-5329>

Zongshuan Duan <http://orcid.org/0000-0002-2598-1752>

Lucy Popova <http://orcid.org/0000-0002-3450-4579>

Claire Adams Spears <http://orcid.org/0000-0002-7869-5661>

Scott R Weaver <http://orcid.org/0000-0003-3155-4041>
 David L Ashley <http://orcid.org/0000-0002-1060-5893>
 Dianne C Barker <http://orcid.org/0000-0003-3676-9148>
 Jidong Huang <http://orcid.org/0000-0002-3425-9155>

REFERENCES

- Glantz SA. Heated tobacco products: the example of IQOS. *Tob Control* 2018;27:s1–6.
- FDA. PMTA Coversheet: technical project lead review (TPL); 2019.
- US Food and Drug Administration. FDA Authorizes Marketing of IQOS Tobacco Heating System with 'Reduced Exposure' Information, 2020. Available: <https://www.fda.gov/news-events/press-announcements/fda-authorizes-marketing-iqos-tobacco-heating-system-reduced-exposure-information>
- World Health Organization. Tobacco free initiative (TFI): Heat-Not-Burn tobacco products information sheet, 2017. Available: https://apps.who.int/tobacco/publications/prod_regulation/heat-not-burn-products-information-sheet/en/index.html [Accessed 13 Jul 2021].
- International PM. IQOS heated tobacco products. Available: <https://www.pmi.com/smoke-free-products/iqos-our-tobacco-heating-system> [Accessed 30 Sep 2021].
- Churchill V, Weaver SR, Spears CA, et al. IQOS debut in the USA: Philip Morris international's heated tobacco device introduced in Atlanta, Georgia. *Tob Control* 2020;29:e152–4.
- Lucas A. Altria can't sell Iqos in the U.S. as Biden administration opts to not intervene in patent dispute. CNBC November 30, 2021. Available: <https://www.cnbc.com/2021/11/30/altria-cant-sell-iqos-in-us-as-biden-wont-intervene-in-patent-dispute.html> [Accessed 20 Dec 2021].
- Hair EC, Bennett M, Sheen E, et al. Examining perceptions about IQOS heated tobacco product: consumer studies in Japan and Switzerland. *Tob Control* 2018;27:s70–3.
- Czoli CD, White CM, Reid JL, et al. Awareness and interest in IQOS heated tobacco products among youth in Canada, England and the USA. *Tob Control* 2020;29:89–95.
- Kim J, Yu H, Lee S, et al. Awareness, experience and prevalence of heated tobacco product, IQOS, among young Korean adults. *Tob Control* 2018;27:s74–7.
- Chang L-C, Lee Y-C, Hsu C, et al. Prevalence of heated tobacco product use among adolescents in Taiwan. *PLoS One* 2020;15:e0244218.
- Tabuchi T, Gallus S, Shinozaki T, et al. Heat-not-burn tobacco product use in Japan: its prevalence, predictors and perceived symptoms from exposure to secondhand heat-not-burn tobacco aerosol. *Tob Control* 2018;27:e25–33.
- Liu X, Lugo A, Spizzichino L, et al. Heat-not-burn tobacco products: concerns from the Italian experience. *Tob Control* 2019;28:113–4.
- Rosen LJ, Kisle S. IQOS campaign in Israel. *Tob Control* 2018;27:s78–81.
- Campaign for Tobacco Free Kids. Examples of PMI's Global Marketing of IQOS, 2018. Available: https://www.tobaccofreekids.org/assets/content/press_office/2018/2018_03_28_IQOS_marketing_examples.pdf [Accessed 19 Mar 2022].
- Mathers A, Schwartz R, O'Connor S, et al. Marketing IQOS in a dark market. *Tob Control* 2019;28:237–8.
- Bar-Zeev Y, Levine H, Rubinstein G, et al. IQOS point-of-sale marketing strategies in Israel: a pilot study. *Isr J Health Policy Res* 2019;8:11.
- Philip Morris USA Inc. IQOS 2021. Available: <https://www.getiqos.com/ageaffirmed/home/where-to-find-iqos/store-locator.html> [Accessed 20 May 2021].
- Henriksen L, Ribisl KM, Rogers T, et al. Standardized tobacco assessment for retail settings (stars): dissemination and implementation research. *Tob Control* 2016;25:i67–74.
- McHugh ML. Interrater reliability: the kappa statistic. *Biochem Med* 2012;22:276–82.
- Tompkins CNE, Burnley A, McNeill A, et al. Factors that influence smokers' and ex-smokers' use of IQOS: a qualitative study of IQOS users and ex-users in the UK. *Tob Control* 2021;30:16–23.
- Campaign for Tobacco Free Kids. Philip Morris caught Red-Handed marketing IQOS to young people on social media 2019. Available: https://www.tobaccofreekids.org/press-releases/2019_05_10_pmi_iqos_socialmedia_marketing [Accessed 08 Jun 2022].
- Huang J, Duan Z, Kwok J, et al. Vaping versus JUULing: how the extraordinary growth and marketing of JUUL transformed the US retail e-cigarette market. *Tob Control* 2019;28:146–51.
- Chen-Sankey JC, Unger JB, Bansal-Travers M, et al. E-Cigarette marketing exposure and subsequent experimentation among youth and young adults. *Pediatrics* 2019;144.
- Jackler RK, Chau C, Getachew B. *JUUL advertising over its first three years on the market*. SRITA White Paper, 2019: 1–48.
- Perrone M. Altria expands sales of heated-cigarette as revenue slides. *The Washington Post* July 28, 2020. Available: https://www.washingtonpost.com/business/altria-expands-sales-of-heated-cigarette-as-revenue-slides/2020/07/28/edc29878-d0db-11ea-826b-cc394d824e35_story.html [Accessed 29 Dec 2021].