Heat-not-burn tobacco products: concerns from the Italian experience

INTRODUCTION

Heat-not-burn (HNB) tobacco products are disposable tobacco sticks heated, rather than combusted, by an electronic device to generate an aerosol containing nicotine.[1] IQOS is the brand name of such a product by Philip Morris International, launched in 2014 in Italy as a pilot country for the European market. IQOS is now in commerce in 30 countries, including 19 European ones, and applications have been submitted to market it as a modified risk tobacco product in the USA.

Most safety data on this new tobacco product come from research conducted by the tobacco industry.[2] The few independent toxicological studies confirm that HNBs release harmful and potentially harmful substances, although at reduced levels as compared with conventional cigarettes.[1 3 4] To our knowledge, the only available studies on the use of HNBs are two repeated online surveys on Japanese adult population, showing a prevalence of IQOS users of 0.3% in 2015, 0.9% in 2016 and 3.6% in 2017.[5 6] We investigated HNB awareness and use in Italy, where IQOS is the only available HNB.

METHODS

In 2017, we conducted a face-to-face survey of 3086 subjects selected through multistage sampling to be representative of the general Italian population aged ≥15 years (52.4 million inhabitants).[7] Besides information on general sociodemographics, smoking and e-cigarette use, participants were asked about their awareness and use of IQOS.

RESULTS

One in five (19.5%) respondents were aware of IQOS, 1.4% have tried it and 2.3% intended to try it (table 1). Overall, 1.0% of never smokers, 0.8% of ex-smokers and 3.1% of current cigarette smokers have tried IQOS. Correspondingly, 1.2% of never e-cigarette users, 2.9% of ex-e-cigarette users and 7.7% of current e-cigarette users have tried IQOS.

DISCUSSION

Almost 3 years after having been launched, use of IQOS is still limited in the Italian population. However, our data indicate that 739 000 Italians have already tried IQOS, including 329 000 never smokers.

Table 1 Awareness and use* of IQOS, overall and according to selected characteristics. Italy, 2017

		Awareness of IQOS (%)†				
	N	Never heard about IQOS (%)†	Heard about IQOS, but don't know what it is (%)†	Never tried, without intention to try	Never tried, with intention to try	Already tried
Total	3086	69.9	10.6	15.8	2.3	1.4
Sex						
Men	1484	67.5	9.8	18.8	2.8	1.2
Women	1602	72.0	11.5	13.1	1.8	1.6
Age group (years)						
15–24	350	73.8	9.3	14.1	1.9	0.9
25–44	940	64.7	11.7	19.8	2.9	1.0
45–64	1018	65.0	12.3	17.8	2.5	2.4
≥65	778	80.6	7.8	9.2	1.5	1.0
Level of education‡						
Low	1098	76.7	9.0	11.5	1.8	1.0
Intermediate	1496	66.4	11.7	17.2	3.0	1.6
High	492	64.9	11.1	21.1	1.1	1.8
Geographical area						
Northern Italy	1426	68.3	10.3	17.0	2.7	1.8
Central Italy	623	71.2	11.4	14.2	2.3	0.9
Southern Italy and islands	1037	71.2	10.7	15.2	1.8	1.2
Cigarette smoking status§						
Never smoker	2009	70.9	11.6	14.8	1.7	1.0
Current smoker	688	63.4	10.2	18.3	5.0	3.1
Ex-smoker	389	75.9	6.4	16.4	0.5	0.8
E-cigarette use¶						
Never user	2924	71.2	10.2	15.7	1.7	1.2
Ex-user	86	55.1	10.6	19.3	12.1	2.9
Current user	76	35.6	27.2	15.5	14.0	7.7

*Awareness and use of IQOS was assessed using the following question 'Have you ever heard about 'IQOS', a device which heats (but does not burn) tobacco, have you ever tried it or do you have the intention to try it? Please, do not confuse IQOS with e-cigarettes or other vaping devices'. Participants were admitted to answer only one of the following options: (a) I have never heard about it; (b) I have heard about it, but I don't know what it is; (c) I have heard about it, I have never tried it, and I have no intention to try it; (d) I heard about it, I have never tried it but I have the intention to try it; (e) I have heard about it and I tried it.
†Row percentages.
‡Level of education: Low=middle school or below; Intermediate=high school; High=attending university or above.
§Ever cigarette smokers (current and ex-smokers) were participants who had smoked 100 or more cigarettes in their lifetime. Ex-smokers were participants who had quit smoking for at least 1 year, and current smokers were individuals continuing smoking or having stopped for less than 1 year.
¶Current e-cigarette users were individuals who occasionally or regularly used e-cigarettes at the time of interview. Ex-e-cigarette users were those who had quit e-cigarette use before the time of interview.

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Moreover, another 1 205 000 Italian adults, including 619 000 non-smokers (ie, never or ex-smokers) expressed their intention to try IQOS in the future.

In Italy, HNBs enjoy the same tax reduction of e-cigarettes (ie, 50% lower as compared with conventional cigarettes).[8] Moreover, they bypass the most important tobacco control policies: health warnings cover 30% of the HNB packaging without pictorial images, and the comprehensive smoking ban and the tobacco advertising bans are not applicable to HNBs.[8 9] These fiscal and regulatory benefits are due to the alleged belief in HNB harm reduction.[8 9] However, there is no evidence indicating that those products are effective for cessation from conventional cigarettes, and independent toxicological studies confirm that these products release measurable levels of carcinogenic compounds.[1 3 4] Thus, HNBs likely carry less risk than cigarettes, but are not risk-free. Moreover, their nicotine levels are similar to (ie, around 80%) those of conventional cigarettes.[1 3]

Limitations include the relatively small sample size that does not allow us to obtain stable prevalence estimates in subgroups. Moreover, the self-reported data may carry some misclassification of information, although we specifically reminded survey participants not to confuse IQOS with e-cigarettes.

We found that the absolute number of never smokers who have already tried IQOS in Italy is comparable to that of current smokers. Among Italian adults with an intention to try IQOS, the number of non-smokers even exceeds that of current smokers. Therefore, these findings suggest that IQOS may create new nicotine addicted generations.

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Contributors SG and RP had the original idea for the study; XL and SG drafted the research letter; AL and XL conducted the data analysis; XL, AL, TT and SG gave substantial contribution to conception, design and interpretation of data; RP and LS gave contributions to conception and design of the study and provided data from the survey; all authors critically revised the manuscript and approved its final version.

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Competing interests None declared.

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REFERENCES

1 Auer R, Concha-Lozano N, Jacot-Sadowski I, *et al*. Heat-not-burn tobacco cigarettes: smoke by any other name. *JAMA Intern Med* 2017;177:1050-1052.
2 Smith MR, Clark B, Lüdicke F, *et al*. Evaluation of the tobacco heating system 2.2. part 1: description of the system and the scientific assessment program. *Regul Toxicol Pharmacol* 2016;81(Suppl 2):S17–26.
3 Farsalinos KE, Yannovits N, Sarri T, *et al*. Nicotine delivery to the aerosol of a heat-not-burn tobacco product: comparison with a tobacco cigarette and e-cigarettes. *Nicotine Tob Res* 2017.
4 Ruprecht AA, De Marco C, Saffari A, *et al*. Environmental pollution and emission factors of electronic cigarettes, heat-not-burn tobacco products, and conventional cigarettes. *Aerosol Sci Technol* 2017;51:674–84.
5 Tabuchi T, Kiyohara K, Hoshino T, *et al*. Awareness and use of electronic cigarettes and heat-not-burn tobacco products in Japan. *Addiction* 2016;111:706–13.
6 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–e33.
7 Lugo A, Zuccaro P, Pacifici R, *et al*. Smoking in Italy in 2015-2016: prevalence, trends, roll-your-own cigarettes, and attitudes towards incoming regulations. *Tumori* 2017;103:353–9.
8 Legislative Decree. Decreto Legislativo, 5 Dicembre 2014. 2014. n. 188 http://www.governo.it/sites/governo.it/files/77443-9913.pdf (accessed 21 Dec 2017).
9 Legislative Decree. Implementation of Directive 2014/40/EU on streamlining the legislative, regulatory and administrative provisions of the member states regarding the processing, presentation and sale of tobacco products and related products, which replaces directive 2001/37/EC. (16G00009). 2016. https://www.tobaccocontrollaws.org/files/live/Italy/Italy%20-%20Leg.%20Decree%20No.%206%20of%20Jan.%2012%2C%202016.pdf (accessed 21 Dec 2017).

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