

# Electronic cigarette use and perceptions amongst UK medical students: A cross-sectional study

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## Dear Editor,

We report a first of its kind survey of medical students in the UK, assessing tobacco and e-cigarette consumption, beliefs about e-cigarettes and smoking cessation curriculum assessment. All healthcare professionals have a role in promoting smoking cessation, with rates improved by the quality of advice offered and by combining pharmacotherapy and behavioral support<sup>1,2</sup>. Medical students, as future clinicians, will play a critical role in smoking cessation efforts. We conducted a cross-sectional study between 5 December 2019 and 6 February 2020 in which a 20-item (19 multiple choice and 1 free text) questionnaire was distributed to 9 UK medical schools. A total of 188 responses were received encompassing all distributed medical schools. Current or past e-cigarette use was reported by 32.6% with 4.3% (n=8) using e-cigarettes daily and 1.1% (n=2) using e-cigarettes weekly; 8.5% (n=16) reported having tried or regularly using an e-cigarette, having never tried smoking tobacco; and 20% (n=2) of regular e-cigarette users had never smoked tobacco.

With regard to smoking cessation and education, e-cigarettes were considered beneficial for reducing traditional cigarette use by 89.9% of respondents and 56.1% would recommend them to patients for this purpose. When asked how addictive e-cigarettes are compared to traditional cigarettes, 64.9% (n=122) felt they were 'equally addictive' or 'more addictive' than tobacco. Of these, 35.2% (n=43) identified as regular or previous e-cigarette users. Participant responses are detailed in Table 1.

When asked if their medical school curriculum provided sufficient education regarding tobacco and e-cigarettes, 46.8% (n=88) of students felt that it did. However, when answering to the question 'Would you feel comfortable advising a patient about the use of e-cigarettes?', 60.6% (n=114) responded 'no, not confident in doing so'. There was a difference in confidence level noted between those at early and late stages of medical school with 52.0% (n=13) of final year students not feeling confident advising patients compared with 73.3% (n=63) of students in their first and second year (p=0.044,  $\chi^2$  test).

Through this study, we have identified that despite an overwhelming majority believing e-cigarettes are useful for reducing tobacco consumption, many would not recommend them to patients for this purpose and the majority lack confidence to advise patients about their use. This is consistent with US data<sup>3,4</sup>. We also reveal a belief among medical students that e-cigarettes are harmful with more than 1 in 4 believing e-cigarettes to be at least as harmful as tobacco. Respiratory disease was the most commonly reported perceived health risk, with 81% (n=152) of respondents citing this as a concern. This is at odds with Public Health England's guidance stating e-cigarettes to be '95% less harmful than cigarette smoking'<sup>5</sup>. Many students felt that they have not received sufficient

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**Table 1.** Distribution of participants' responses (%) to questions asked in the survey, stratified by medical school year

	Response	All respondents (N=188)	Year 1 (n=52)	Year 2 (n=34)	Year 3 (n=26)	Year 4 (n=39)	Years 5 & 6 (n=25)	Intercalated students (n=12)
<b>Perceived risks and benefits</b>								
Do you believe e-cigarettes are harmful to those who use them?	Yes	93.1	94.2	94.1	84.6	92.3	96.0	100.0
	No	6.9	5.8	5.9	15.4	7.7	4.0	0.0
Do you believe e-cigarettes are harmful to people that are near users or those that are passively exposed?	Yes	47.3	57.7	41.2	50.0	43.6	44.0	33.3
	No	52.7	42.3	58.8	50.0	56.4	56.0	66.7
How harmful do you consider e-cigarettes to be in comparison to traditional cigarettes?	More harmful	1.6	3.8	0.0	3.8	0.0	0.0	0.0
	Less harmful	73.4	61.5	76.5	80.8	82.1	76.0	66.7
	Equally harmful	25.0	34.7	33.5	15.4	17.9	24.0	33.3
Do you think it is safe for pregnant women to use e-cigarettes?	Yes	3.2	0.0	8.8	0.0	2.5	4.0	8.3
	No	67.0	75.0	55.9	65.4	66.7	72.0	58.4
	Don't know	29.8	25.0	35.3	34.6	30.8	24.0	33.3
<b>Cessation and education</b>								
Do you believe e-cigarettes are useful for reducing tobacco consumption (e.g. smoking traditional cigarettes)?	Yes	89.8	90.4	91.2	92.3	94.9	80.0	83.3
	No	10.2	9.6	8.8	7.7	5.1	20.0	16.7
Would you recommend the use of e-cigarettes to a patient to quit tobacco smoking?	Yes	56.1	46.2	61.8	69.2	51.3	60.0	58.3
	No	43.9	53.8	38.2	30.8	48.7	40.0	41.7
How addictive do you feel that e-cigarettes are compared to traditional cigarettes?	More addictive	12.8	15.4	11.8	11.5	12.8	12.0	8.3
	Less addictive	18.1	13.5	17.6	23.1	25.6	16.0	8.3
	Equally addictive	52.1	57.6	55.9	50.0	38.5	52.0	66.7
	Don't know	17.0	13.5	14.7	15.4	23.1	20.0	16.7
Do you feel that you are sufficiently educated regarding e-cigarettes at your medical school?	Yes	46.5	50.0	47.1	50.0	43.6	40.0	41.7
	No	53.5	50.0	52.9	50.0	56.4	60.0	58.3
Would you feel comfortable advising a patient about the use of e-cigarettes?	Yes	38.9	22.2	35.3	57.7	50.0	48.0	33.3
	No	61.1	77.8	64.7	42.3	50.0	52.0	66.7

teaching about e-cigarettes at medical school. As a cohort of the population that is pivotal in reducing the use of tobacco in the future, there is a need to address deficiencies in knowledge and confidence advising patients about e-cigarettes. We believe that our data provide meaningful insights about UK medical students' knowledge and perceptions about e-cigarettes and should prompt medical schools to consider their course content on smoking cessation and e-cigarettes.

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#### CONFLICTS OF INTEREST

The authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest and none was reported.

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