Smoking cessation support for dual users of cigarettes and electronic cigarettes

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The latest Cochrane review in October 2020 concluded with moderate confidence that e-cigarettes with nicotine help more adults to stop smoking than nicotine replacement therapy or nicotine-free e-cigarettes.[1] Population-level time-series analyses of UK and US data also showed that increases in the prevalence of e-cigarette use have been associated with the overall rate of smoking cessation,[2,3] and indirect simulation modelling suggests a decline in overall prevalence coinciding with the growth in the use of the products between 2012 and 2019 in England.[4] The UK government and Public Health England adopt, in our view, a rational approach to e-cigarettes and support proportionate regulation that seeks to maximise their opportunities and minimise their risks. This regulation has included an early ban on sales to children and advertising that could cross borders, limits on nicotine content, and clear addiction warnings, alongside maintaining tax advantages compared with combustible cigarettes, a notification scheme intended to ensure safety standards (for which the Medicines and Health-care Products Regulatory Agency is the competent authority), and recommendations for adults to use them for smoking cessation, including in national cessation campaigns. New Zealand and Canada have adopted similar approaches. Nevertheless, several health organisations do not recommend e-cigarettes for smoking cessation, recommend stricter regulation of these products, or both (eg, US Preventive Services Task Force, US Surgeon General, WHO, and the Scientific Committee on Health, Environmental and Emerging Risks)[5]. This position is often explained by uncertainty about the balance of harms and benefits, which is contrasted with the well established profile of existing smoking cessation medications. Of possible harms, dual use is often cited, which, in this context, refers to the use of e-cigarettes while continuing to smoke cigarettes. Cross-sectional surveys over the past decade from many countries show that a sizeable proportion of vapers—often around half—report current smoking.[6] Dual use is unlikely to reduce harm substantially unless it leads to people quitting cigarettes,[7] and will cause harm if quitting is depressed as a result. Notwithstanding population-level time-series and modelling studies, the extent to which cross-sectional and cohort studies have shown that dual use leads to quitting in the real world is contested.[8,9] In our judgment, there are convincing explanations relating to measurement and sampling biases to explain why some studies can find dual use to be negatively associated with cessation (eg, through self-selection of more dependent smokers into dual use).[9] This uncertainty from observational studies is unavoidable, and trial evaluation of scalable interventions that could promote complete cigarette abstinence among dual users is an important area of research. Scalable interventions showing cigarette cessation among dual users might help organisations to reconsider the potential of e-cigarettes to improve public health.

In the *Lancet Public Health*, Ursula Martinez and colleagues report the results of the first trial of an intervention specifically developed to promote cigarette cessation among dual users.[10] The theory-based intervention comprised a series of booklets aiming to motivate the complete cessation of cigarettes among dual users by advising how to use e-cigarettes to help with quitting. The study recruited 2896 adult participants (18 years or older) to one of three groups: a control group receiving assessment only (575 participants), a group receiving generic smoking cessation self-help booklets (1154 participants), and a third group receiving the targeted intervention (1167 participants). Individuals in the generic or targeted intervention groups received monthly cessation materials for 18 months, with assessments every 3 months for 24 months.

The results showed that the targeted intervention increased smoking abstinence throughout the treatment period compared with assessment only, particularly among dependent smokers. These findings complement a Cochrane review that reported evidence of moderate certainty that written self-help materials helped more people to stop smoking than no intervention among people trying to quit (and not necessarily dual users).[11] An important advance by Martinez and colleagues was that they evaluated their intervention among people who were not seeking treatment or necessarily motivated to quit, which reflects the broad composition of dual users in the general population. Moreover, the study's sample

mirrors typical patterns of dual use: 70% of participants had started using e-cigarettes more than a year earlier without yet managing to quit cigarettes, despite 45% having started using them to stop smoking.

Martinez and colleagues' study is an excellent contribution to a priority research area. However, there is some uncertainty, and caution is needed regarding the immediate public health significance of their study. Biochemical outcome verification was minimal and, in unplanned sensitivity analyses using the most conservative assumption that all missing responders had relapsed, no evidence was found of a significant effect on cessation. Additionally, although evidence was found of an effect across the 18 months period over which booklets were provided, there was no significant difference at 24 months. It is not clear if the data were insensitive or supported there being no effect, but this uncertainty highlights the urgency of another important area for further research: long-term relapse rates after quitting smoking with e-cigarettes.

Dual use is not unique to e-cigarettes—for example, in England, the proportion of people currently using nicotine replacement therapy (NRT) and smoking is similar to that of dual use of e-cigarettes and cigarettes[12]—and the results from Martinez and colleagues complement an existing body of research on dual use with NRT. There is good trial and population evidence that the use of NRT by current smokers can lead to later quitting; consequently, NRT is medically licensed for harm reduction in the UK.[13] Of relevance, Martinez and colleagues report that, under the conservative assumption of missing equals smoking, 21·6% of smokers in the assessment only group, who were not seeking treatment nor necessarily motivated to quit, reported 90-day abstinence at the 24-month follow-up. This considerable minority of dual users stopping without intervention is an indication that this might be a group of smokers relatively successful at quitting. Long-term cessation rates among highly dependent or unmotivated smokers typically would be much lower.

Further research will be required to convince sceptical organisations and researchers that e-cigarettes should be recommended for cessation and can be part of a comprehensive approach to tobacco control. However, low-cost and scalable interventions that improve quitting among dual users is another factor that should inform judgments in balancing the harms and risks of e-cigarettes.

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