

Vaping and Nicotine Addiction: A Substance Abuse Perspective

Text by Dr Ian Matthias Ng



“So how many cigarettes are you smoking now?”

“Oh, doctor, you’ll be very happy to know that I have stopped smoking!”

“When did you stop?”

“Last month.”

“Oh, that’s really good! How did you manage to do that?”

“Oh, I vape now, doctor, it’s much better and cheaper.”

Cue an internal sigh. This real-life exchange, now all too common in our consultation rooms, is illustrative of not just the substitutionary nature of many addictions but also the challenges brought on by vaping, or electronic cigarette (e-cigarette), addiction.

Challenges of e-cigarette addiction

The first of these challenges is that e-cigarette use is difficult to quantify. This is because each e-cigarette can dispense a variable dose of nicotine in each inhalation, and patients frequently switch brands and types of e-cigarettes due to cost and the illegal nature of their distribution. My colleagues and I usually take a more individual approach and ask patients to estimate their use for us in terms of canisters or tobacco cigarettes used over a period, but this is hardly a scientific exercise, especially where there is concomitant use of tobacco cigarettes. There exist standardised and specifically validated scales specific to e-cigarette use that evaluate the severity of dependence

and the patient’s readiness to quit (eg, the e-cigarette Fagerstrom Test of Cigarette Dependence, the e-cigarette dependence scale and the Penn State Electronic Cigarette Dependence Index). However, none of these have been validated for local use at the time of writing.

The second challenge is that e-cigarette use can have a higher addiction potential and consequently greater impact on mental health than tobacco cigarettes. This is because e-cigarettes are able to dispense a greater amount of nicotine. Exacerbating this difficulty is the relatively accessible and cost-effective nature of vaping, which relieves patients of the financial incentive to quit. A 2023 *Straits Times* article reported that a disposable vape bought over social media and/or private messaging apps costs about S\$30 and can last roughly 5,000 puffs, whereas a packet of 20 premium tobacco cigarettes would cost about \$14.30.¹ Although there has yet to be any local data, our experience has been that people who vape find it harder to quit and are likely

using more nicotine as compared to their tobacco-using counterparts. Likewise, e-cigarettes are associated with mental health problems such as depression, suicidal ideation and suicidal attempts.²

The third challenge is the perception that e-cigarettes are somehow safer than tobacco cigarettes. This may have arisen from the fact that the nicotine vapour is itself odourless, which avoids the unpleasant sensations associated with tobacco cigarettes, such as lingering pungent or smoky odours on clothing or the harsh burning of smoke inhalation. This perception is exacerbated by the fact that some countries, such as the UK, have even endorsed e-cigarette use for smoking cessation. Indeed, my colleagues and I find that many patients have switched from tobacco to e-cigarette use, and some even ask us for advice about using e-cigarettes to aid in their treatment for nicotine addiction.

The fourth challenge is the allure of e-cigarettes to younger people. This also arises from both the odourless nature of nicotine vapour and the fact that an assortment of flavouring compounds can be added to the vapour. This enhances its attractiveness to younger people and when coupled with the varied designs and forms of the e-cigarettes which aids in their concealment, makes it harder for teachers, parents and other adult caregivers to detect and bring the young person to our attention.³ This correlates well with our clinical experience that younger patients tend to vape rather than smoke tobacco cigarettes, present

with higher levels of nicotine use and experience more psychiatric co-morbidity.

The fifth challenge is that e-cigarette use can be a gateway to other substances of abuse. The reason for this is twofold: firstly, like tobacco cigarette use, the use of nicotine itself can have a gateway drug effect. Secondly and more worryingly, e-cigarettes have been used to smoke other harmful substances such as marijuana and could theoretically be used to consume “harder” substances, such as new psychoactive substances, amphetamines and opiates as well.⁴ There has been at least one such suspected case encountered by a colleague, although thankfully this remains an isolated phenomenon for now.

The sixth and final challenge is the dearth of local data when it comes to e-cigarette consumption and treatment. More public and clinical awareness of its harms is needed to garner support for high quality surveys and clinical trials. Additionally, the illegal nature of e-cigarette use also means that patients are unlikely to disclose consumption, even when given the reassurance of confidentiality.

Where do we go from here?

In July 2024, the National Addictions Management Service, in conjunction with our respiratory medicine and public health colleagues from Tan Tock Seng Hospital and National University Hospital, have come up with a clinical guidance document for the care of people who vape.⁵ Essentially, the same principles used in the treatment for nicotine use disorder should still be followed. Namely, early identification and the use of an individualised treatment plan, including psychoeducation (particularly of the harms and uncertainties of e-cigarette use), motivational interviewing, counselling and nicotine replacement therapy.

Unfortunately, at the time of this writing, many pharmacological and non-pharmacological therapies are adapted from tobacco cigarette smoking cessation tools, and there is currently

limited and preliminary evidence that they are effective for e-cigarette cessation as well. Nonetheless, they remain potential tools that should be given to patients. Non-pharmacological therapies include behavioural therapies and existing programmes like the Health Promotion Board’s I Quit Programme. Pharmacological therapies include conventional nicotine replacement and can be enhanced with bupropion and varenicline, unless in pregnant or breastfeeding women (due to risk of potential harms to the mother and fetus) or adolescents/youths (due to lack of safety and effectiveness data).

While there is some evidence that e-cigarette use can be helpful in smoking cessation, clinical trials have produced mixed results, are fraught with methodological issues, and lack long-term data. There is also evidence that smokers may continue to use e-cigarettes even if they have successfully quit cigarette smoking, and when younger people use e-cigarettes, it may lead to use of other drugs. Even in the UK where e-cigarette use is legal and sometimes prescribed for smoking cessation, the National Health Service has cautioned that e-cigarette use is not risk-free and is not recommended for non-smokers and young people under 18.⁶

In conclusion, e-cigarette use presents many challenges in the specialist clinical setting, ranging from quantification and its higher potential for addiction and harm, to public perceptions of its superior safety and its allure and gateway drug effects on our youth. While treatments for e-cigarette use exist, these are adapted from tobacco cigarette smoking cessation tools, and there is currently limited and preliminary evidence of their efficacy. The dearth of local surveillance and treatment data is another challenge, exacerbated by its illegal nature. A precautionary approach should be emphasised, especially towards the use of e-cigarettes treatment of nicotine addiction, and all patients should be encouraged to stop vaping. ◆

References

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6. *Better Health. Vaping to quit smoking*. In: *National Health Service*. Available at: <https://bit.ly/3z66iBr>. Accessed 29 August 2024.

Further readings

- a. *Academy of Medicine, Singapore, Section of Addiction Psychiatry College of Psychiatrists, Singapore, College of Public Health & Occupational Physicians, Singapore. Position Paper on E-cigarettes and Vaping*. Singapore: Academy of Medicine, Singapore, 2024.
- b. *National Addictions Management Service. Smoking and Vaping*. Available at: <https://bit.ly/46WnKMz>. Accessed 16 August 2024.

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