

# Misinformation on Twitter adversely affects adults' health decisions

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UK and US adult smokers who were considering using e-cigarettes were deterred when exposed to tweets falsely implying the devices are more harmful than conventional cigarettes, finds new research. The study,

published in *BMJ Open* and led by researchers at the University of Bristol (UK) and the University of Pennsylvania (US), is the first to examine the effect of this type of exposure which has important implications for public health.

While existing studies have examined current perceptions of [e-cigarette](#) harms, little is known about the role of exposure to misinformation on [social media](#) on these perceptions, and consequently on e-cigarette intentions and use.

In this Cancer Research UK (CRUK)-funded study, researchers from Bristol's [medical school](#) and Penn's Annenberg School for Communication recruited 2,400 adult [smokers](#) from the US and UK who were not currently using e-cigarettes to take part in an online randomized controlled experiment to assess the effect of exposure to misinformation about e-cigarette harms on Twitter on adult current smokers' intention to quit smoking cigarettes. They also assessed their intention to purchase e-cigarettes and their perceived relative harm of e-cigarettes compared to regular cigarettes.

Participants were shown different types of [health](#)-related information and asked for their opinions about e-cigarettes, and were asked questions on their intention to quit smoking, intention to purchase e-cigarettes, and perceived relative harm of e-cigarettes compared to regular cigarettes. After randomization, they were asked to view one [tweet](#) at a time in random order (four tweets in total) and were asked brief questions about each tweet, in terms of the perceived effectiveness of the tweet; likelihood of replying, retweeting, liking, and sharing the tweet; and their emotional response to the tweet.

Results showed that US and UK adult current smokers were deterred from considering using e-cigarettes even after brief exposure to tweets that e-cigarettes are as or more harmful than smoking, suggesting that

misinformation about e-cigarette harms may adversely influence adult smokers' decisions to consider using e-cigarettes as a way of stopping smoking. Conversely, the results found that US adult current smokers may be encouraged to use e-cigarettes and view them as less harmful than regular cigarettes, after exposure to tweets that e-cigarettes are completely harmless.

Andy Tan, Associate Professor at the University of Pennsylvania's Annenberg School for Communication and Director of the Health Communication & Equity Lab, explains: "This is the first study to explore the effect of exposure to misinformation about e-cigarette harms on Twitter among smokers. These findings are important because they show that even brief exposure to misinformation about e-cigarettes may be hindering efforts to reduce the burden of tobacco smoking on current smokers in the US and UK."

Dr. Caroline Wright, Senior Research Associate and CRUK Population Research Postdoctoral Fellow from Bristol Medical School and the study's lead author, said: "Health information is commonly accessed online, with recent reports showing around 63 percent of UK adults using the internet to look for health-related information, and 75 percent of US adults using the internet as their first source of health information. People are increasingly encountering free and publicly available health information through social media platforms such as Twitter or Facebook. However, this ease of accessing information comes at a cost as the spread of misinformation can have negative consequences on people's health choices and behaviour. Given this, we would remind smokers that although e-cigarettes are not completely harmless, their short-term health risks are considerably lower than smoking regular cigarettes. We would encourage smokers accessing information online to check their national health agency for accurate information about e-cigarettes."

"For health care providers we recommend being aware that your patients may have been influenced by misinformation on social media, and therefore may have misperceptions about e-cigarettes. Correct misperceptions, and consider the ways you can support your patients, so they are able to identify accurate [health information](#). And finally, for [policy makers](#): ensure that all social media searches associated with e-cigarettes are flagged with official health guidance, regulate all forms of misinformation on social media, and improve population awareness and skills to seek out accurate [information](#)."

**More information:** Caroline Wright et al, Effects of brief exposure to misinformation about e-cigarette harms on twitter: a randomised controlled experiment, *BMJ Open* (2021). [DOI: 10.1136/bmjopen-2020-045445](#)

Provided by University of Bristol

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