- Virus / Smoking

Scientific study finds no evidence linking vaping and COVID-19

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AMAJOR study by Mayo Clinic in the United States which employed logistic regression models found no evidence linking vaping and Covid-19 diagnosis, based on the health records of nearly 70,000 patients.

"In contrast to the few prior studies that explored the association of e-cigarette use and COVID-19, we find no evidence that current or former e-cigarette users are more likely to be diagnosed," according to researchers from Mayo Clinic who conducted the study, considered one of the largest of its kind to date.

Titled "Electronic Cigarette Use Is Not Associated with COVID-19 Diagnosis", the study was conducted by researchers from Mayo Clinic, reviewed by The Institutional Review Board (IRB) and published on prestigious medical journals on June 10, 2021.

Authored by Thulasee Jose, Ivana Croghan, J. Taylor Hays, Darrell R. Schroeder and David O. Warner of Mayo Clinic, the analysis tested the hypothesis that e-cigarette use was associated with an increased risk of SARS-COV-2 infection in patients seeking medical care.

It looked at 69,264 patients who were over the age of 12 years, smoked cigarettes or vaped and were given medical care at Mayo Clinic facilities between September 15, 2019 and November 30, 2020.

This followed mainstream media reports based on previous studies showing that vaping links to COVID risks were becoming clear.

Compared with the previous investigations, the Mayo Clinic study analyzed clinical cohort and used self-reported e-cigarette use data that were confirmed and documented in electronic health record by a clinician. COVID-19 diagnosis in the Mayo Clinic study was also confirmed using a diagnostic PCR test.

The study also employed logistic regression models to assess whether current e-cigarette use was associated with an increased risk of COVID-19 diagnosis.

Following two regression models, authors of the study says that e-cigarettes do not appear to increase susceptibility to SARS-COV-2 infection. "Patients who used only e-cigarettes were not more likely to have a Covid-19 diagnosis, whereas those who used only cigarettes had a decreased risk," the study says.

Before the study, the authors, who declared no potential conflicts of interest with respect to the research, authorship and/or publication of the article, said the impact of tobacco use on SARS-COV-2 infection risk and COVID-19 severity remained unclear despite previous studies.

The authors noted that while a previous meta-analysis found that compared with never smokers, current cigarette smokers appeared to be at reduced risk of SARS-COV-2 infection, another systematic review and meta-analysis found that both current and former smoking significantly increased the risk of severe COVID-19 and death.

They said little was also known about how electronic cigarette use might affect risk and there were indirect results from previous studies. Factors that might have complicated

previous studies included inconsistent ascertainment of e-cigarette use in medical records, and the fact that many who use e-cigarettes also use other forms of tobacco.

Thus, the Mayo Clinic study aimed to test the hypothesis that current e-cigarette use is associated with an increased risk of COVID-19 diagnosis in patients seeking medical care.

The study gathered patient demographics, tobacco use status and COVID-19 test status from electronic health record (EHR), while current e-cigarette or conventional cigarette use within the last 30 days was queried during each medical visit.

From September 15, 2019 to November 30, 2020, 69,264 patients were screened and analyzed for e-cigarette and conventional cigarette use during ambulatory appointments at Mayo medical facilities. Among the patients, about 2.7 percent reported current e-cigarette use and 2.4 percent reported former use.

In the first logistic regression model that included e-cigarette and conventional cigarette use as separate variables, the study found that current or former e-cigarette use was not associated with COVID-19 diagnosis. In fact, current, but not former smokers, were less likely to have a COVID-19 diagnosis compared to never smokers.

The study notes that in the second logistic regression model when inhaled tobacco use was included as a single variable, patients who used only e-cigarettes were not more likely to have a COVID-19 diagnosis while those who used only cigarettes had a decreased risk.

"Although e-cigarettes have the welldocumented potential for harm, and the COVID-19 pandemic presents an opportunity to reduce e-cigarette use, our study found that such use does not appear to increase susceptibility to SARS-COV-2 infection among patients seeking medical care. This result suggests the hypothesis that any effects of conventional cigarette smoking on susceptibility are not mediated by nicotine. Future work should evaluate whether e-cigarette use could moderate COVID-19 outcomes," the authors concluded.