Gaiha et al. Disregarded Conventional Publishing Standards

To the Editors:

A recent analysis by Gaiha et al. concluded that “e-cigarette use and dual use of e-cigarettes and cigarettes are significant underlying risk factors for COVID-19” [1]. The article deviated from standard reporting practices in several ways.

First, the authors classified tobacco use as never (referent), ever, and past 30-day use of cigarettes only, e-cigarettes only, and both products. However, Table 1 presented the participant characteristics only for never and ever e-cigarette use; cigarette smoking was absent. This table is not useful because it does not provide information relating tobacco exposures to outcomes in Table 2.

Second, the authors did not disclose the crucial raw numbers of exposed participants who had COVID-19-related symptoms, COVID-19 tests, and COVID-19 diagnoses. As a result, it is very difficult to interpret the results. We offer an example.

Gaiha et al. reported that “COVID-19 diagnosis was five times more likely among ever-users of e-cigarettes only (95% confidence interval [CI]: 1.82–13.96), seven times more likely among ever-dual-users (95% CI: 1.98–24.55), and 6.8 times more likely among past 30-day dual-users (95% CI: 2.40–19.55)” [1]. These adjusted odds ratios are promoted in a Stanford Medicine webpage [2].

Using a standard epidemiologic technique, we estimated the number of exposed cases for each of the adjusted odds ratio in the previous paragraph. They are $n = 5$, $n = 3$, and $n = 5$, respectively. We asked the authors to provide actual numbers. They declined.

The authors’ claims have already prompted national policy recommendations by members of Congress [3,4]. They are obligated to publish a complete table of all participant characteristics that are unweighted so that the study can be adequately evaluated.

Third, the senior author, who is an editorial board member of the Journal of Adolescent Health, may have breached its policy on direct or topical relatedness to her article in the journal and should have been disclosed.

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Brad Rodu, D.D.S.
James Graham Brown Cancer Center
University of Louisville
Louisville, Kentucky

Department of Medicine
School of Medicine
University of Louisville
Louisville, Kentucky

Nantaporn Plurphanswat, Ph.D.
James Graham Brown Cancer Center
University of Louisville
Louisville, Kentucky

References


Gaiha et al. Response

To the Editors:

A recent analysis by Gaiha et al. [1] concluded that “COVID-19 is associated with youth use of e-cigarettes only and dual use of e-cigarettes and cigarettes.” Increasing rates of e-cigarette use among youth and young adults amid a respiratory pandemic should concern regulators interested in improving public health. However, the association reported by Gaiha et al. is not necessarily indicative of a causal relationship between e-cigarette use and contracting COVID-19. The research design uses a multivariate logistic regression, which is standard among epidemiological studies evaluating binary outcome variables, such as testing positive or negative for COVID-19. But the odds ratios (ORs) are calculated with the entire survey sample, which includes participants with different combinations of cigarette and e-cigarette use. The adjusted odds ratios are therefore not necessarily indicative of a causal relationship between e-cigarette use and COVID-19.