Letters

TO THE EDITOR

Limitations of Diagnostic Codes in Assessing Cannabis-Related Cardiovascular Risk

On March 18, 2025, *JACC: Advances* issued a press release detailing preproof results from a retrospective analysis examining cannabis use and cardiovascular events.[1] Using language directly from the manuscript, the announcement emphasized that individuals labeled as "cannabis users" under 50 years of age had more than 6 times the likelihood of experiencing a heart attack compared to "nonusers."

As presented, the findings require careful consideration. First, the terminology "cannabis use," used throughout the manuscript including the title, misrepresents the exposure. The authors relied on International Classification of Diseases-10 codes for exposure: F12.1 (cannabis abuse), F12.9 (unspecified cannabis use), and F12.90 (unspecified, uncomplicated cannabis use). The collapsing of these diagnoses into a single term conflates general "cannabis use" with diagnosed cannabis use and abuse, despite substantial differences between these classifications. "Nonusers" are more accurately described as patients without a cannabis-related diagnosis.

Second, diagnosing cannabis use or abuse requires a clinical encounter. Patients who receive a cannabis-related diagnosis may be more likely to have psychiatric conditions, other substance use disorders, use tobacco, utilize public insurance, and have lower levels of education[2]; factors associated with cardiovascular disease risk. The authors themselves note a 15-fold higher prevalence of depressive disorder and 6-fold higher prevalence of obesity among the exposed. Despite employing a matched propensity score analysis for these and other covariates, key factors such as anxiety, schizophrenia, bipolar disorder, other substance use disorders, medication use (statins and psychiatric drugs), and payer source do not appear to have been included. Further, data from TriNetX indicate that approximately 2% of patients in the database had an International Classification of Diseases code for cigarette smoking, markedly lower than the U.S. population prevalence of ∼11%. This discrepancy strongly suggests residual confounding by smoking and possibly other factors.

To conclude, the labels "cannabis users" and "nonusers" may misinform clinicians, policymakers, and the public, possibly overstating the cardiovascular risks linked to cannabis. Given the data source, future analyses should clearly differentiate cannabis exposure categories, providing detailed stratifications by diagnostic subcategory; include more covariates associated with cannabis diagnosis and cardiovascular disease; and perform quantitative bias analyses for confounding and exposure misclassification.

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The authors attest they are in compliance with human studies committees and animal welfare regulations of the authors' institutions and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the Author Center.

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