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Challenging the Association of Marijuana Laws With Teen Marijuana Use

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To the Editor The debate on effects of state medical and recreational marijuana laws (MMLs/RMLs) is at the forefront of drug policy. Assessing associations of MMLs/RMLs with youth marijuana use is critical given marijuana's potential for long-term negative effects on brain development and function.[1,2] Anderson et al,[3] using Youth Risk Behavior Survey (YRBS) data, report MMLs are not associated with youth marijuana use and RMLs are associated with reduced use. However, their analyses include substantial methodologic flaws that may undermine these findings.

Authors pooled national and state YRBS data from 1993 to 2017. Pooling national and state YRBS data is inappropriate because underlying person-level weights are different, and there is some overlap between national and state YRBS data; thus, a student could be represented more than once. The YRBS codebook explicitly warns against combining these data.[4] Authors pulled state data from the national YRBS and used it to assess state MMLs/RMLs. National YRBS data are nationally representative of high school students but not representative of students in a given state. In some cases, only a small number of schools may be selected within a state for the national YRBS, and individual state and school selection to participate in the national YRBS may vary by survey cycle. Authors used unweighted data; YRBS data are designed to be weighted to capture representative populations.[4] Establishing that MML/RML implementation occurred before marijuana use reported in 2017 YRBS data is critical. In 2017, 9 states and Washington, DC, legalized recreational marijuana; yet only 4 had marketplaces open the full year. Authors also used binary variables to classify MMLs/RMLs as present or absent and did not account for their significant heterogeneity across states despite prior research documenting the pitfalls of this approach.[5] States and Washington, DC, fielded YRBS in the spring or fall of the survey

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year, yet no information is provided on how survey timing and MML/RML implementation were handled. Results would be skewed if students surveyed before law enactment were combined with those surveyed after enactment in other states. Finally, using cross-sectional data to model RMLs alone on youth marijuana use is problematic; use may have changed after MML enactment, which in some states occurred a decade before RML passage. A more sophisticated approach would model effects of MMLs/RMLs on marijuana use accounting for timing of law implementation.

We commend the authors for evaluating potential effects of MMLs/RMLs. However, the significant methodologic flaws described here compel us to question the validity of their findings.

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