

The replacement of our article occurred because of a request by the editors at *JAMA: Network Open* to respond to two concerns raised in *Letters to the Editor*. The first concerned whether presenting weighted vs. unweighted estimates of an average treatment effect is ‘appropriate’. For an economist, the answer to this question is that unweighted and weighted estimates are simply different. An unweighted treatment effect provides an estimate of the effect of the policy on the average person in the sample who was treated, while a weighted treatment effect gives you an estimate of the effect of the policy on the average person in the country that was treated (assuming the weights are designed to make the sample representative of the population). When unweighted and weighted estimates differ, this likely reflects heterogeneity (differences) in the treatment effect across states. Economists have been discussing issues surrounding weighting vs. not weighting regressions for many years, including in a very cleverly titled article (“[What are we weighting for?](#)”), which appeared in the very highly-regarded labor economics journal, the *Journal of Human Resources*:

While applied microeconomists are very nuanced and careful in our academic discussions surrounding weighting, our experience is that physicians are more interested in only showing weighted policy estimates, which we were happy to provide in the revised article.

The second issue raised involved the efficacy of combining the state and national Youth Risk Behavior Survey (YRBS) data. We agree with the Centers for Disease Control and Prevention (CDC) when they insist that researchers should *not combine these surveys and weight the combined sample using the separate sample weights provided in each dataset*. In our original article, we combined the datasets — to maximize the number of state marijuana laws that contributed to the identification of the treatment effect — and produced unweighted estimates to obtain the average treatment effect for the average treated individual in the sample. We also provided separate unweighted estimates from the national and state YRBS data. The editors of *JAMA* asked that we only present weighted estimates from separate datasets in the revision, following the CDC’s instructions for how to present weighted estimates. Again, we were pleased to do so.

With regard to how our results changed with the revisions requested, we noted that some of our prior estimates on the effects of medical marijuana laws (MMLs) — which were negative and statistically significant — were no longer statistically significant. However, some were. For instance, in our revision, we noted, “Moreover, in the corrected analysis, we found that 4 or more years after MML adoption, marijuana use among adolescents declined (OR, 0.83; 95% CI, 0.68-0.99; P=.049), as noted in the Figure in the replacement article.” This result was different from our original finding in that the prior

analysis showed a significant decline in marijuana use that occurred more quickly than ‘4 or more years after MML adoption.’

Finally, the conclusion of our original article (published in September 2021) — which appeared in the ‘Discussion’ section —read as follows:

‘Consistent with the results of prior studies, there was little evidence that [recreational marijuana laws] RMLs or MMLs encourage youth marijuana use. Contrary to the results reported by Anderson et al, the overall association between RML adoption and marijuana use among teenagers was statistically insignificant. As more years of post-legalization data become available, researchers will be able to draw firmer conclusions about the relationship between RMLs and teenage marijuana use.’

The above quoted conclusion from our original paper reflects the conclusion of our revised paper. We find no evidence from the YRBS data — whether the estimates are weighted or unweighted, are derived from “pooled or separate” national or state YRBS data, or following economists’ conventional empirical practices or physicians’ preferred approaches — that the legalization of marijuana has (as yet) encouraged youth marijuana use.

We learned a great deal from going through this exercise with the editors, in particular how important it is for researchers across disciplines to be able to talk to one another about technical, nuanced applied econometric issues.