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This supplemental material has been provided by the authors to give readers additional information about their work.

eTable 1. Associations of Recreational Cannabis Laws and Sociodemographic and Policy Controls with Drinking Behavior

Covariate	Drinking Behavior (Percentage Point Association, 95% CI, *P* Value)		
	Any Drinking	Binge Drinking	Heavy Drinking
Year Relative to Recreational Cannabis Law Implementation			
3 Years Prior	0.55 [-0.43, 1.53] 0.265	-0.22 [-0.85, 0.41] 0.495	0.19 [-0.22, 0.6] 0.357
2 Years Prior	0.04 [-0.96, 1.03] 0.939	0.03 [-0.34, 0.4] 0.876	0.12 [-0.18, 0.43] 0.41
1 Year Prior	-	-	-
Implementation Year	1.16 [0.14, 2.19] 0.026	0.54 [-0.04, 1.13] 0.066	0.21 [-0.36, 0.78] 0.46
1 Year Post	0.56 [-0.26, 1.38] 0.177	0.16 [-0.77, 1.08] 0.736	0.21 [-0.13, 0.56] 0.217
2 Years Post	1.05 [-0.16, 2.26] 0.089	0.45 [-0.38, 1.27] 0.283	0.37 [-0.02, 0.76] 0.063
Age			
18-24	-	-	-
25-34	-4.87 [-15.95, 6.2] 0.381	0.64 [-9.28, 10.55] 0.898	-0.86 [-5.36, 3.64] 0.702
35-49	-25.34 [-40.69, -10] 0.002	-17.04 [-26.39, -7.7] 0.001	-6.12 [-10.11, -2.12] 0.003
50-64	-21.53 [-33.56, -9.5] 0.001	-23.56 [-33.22, -13.9] 0	-6.91 [-12.49, -1.33] 0.016
65-79	-17.88 [-35.23, -0.53] 0.044	-19.7 [-31.33, -8.07] 0.001	-8.3 [-14.66, -1.95] 0.011
80+	-26.18 [-50.59, -1.77] 0.036	-24.58 [-43.63, -5.53] 0.012	-1.14 [-10.93, 8.64] 0.815
Missing	-35.97 [-77.83, 5.88] 0.09	-16.75 [-40.83, 7.33] 0.169	-7.17 [-27.5, 13.15] 0.482
Race/Ethnicity			
Non-Hispanic White	-	-	-
Non-Hispanic Black	2.07 [-2.67, 6.81] 0.384	-1.66 [-4.55, 1.24] 0.256	-0.53 [-2.6, 1.53] 0.607
Hispanic	-0.52 [-4.31, 3.26] 0.783	0.65 [-1.44, 2.73] 0.536	-1.18 [-2.65, 0.3] 0.115
Other	-5.39 [-8.93, -1.86] 0.004	-4.95 [-7.39, -2.51] 0	-3.29 [-5.14, -1.44] 0.001
Binary Covariates			
Female	-8.22 [-14.29, -2.15] 0.009	-9.74 [-15.19, -4.29] 0.001	-2.63 [-5.62, 0.36] 0.083
Some College[b]	24.33 [18.62, 30.04] 0	3.48 [-1.55, 8.51] 0.171	-0.09 [-4.11, 3.92] 0.963
Student	-18.74 [-34.75, -2.74] 0.023	-15.67 [-25.45, -5.88] 0.002	-2.53 [-8.41, 3.35] 0.391
Unemployed	5.45 [-7.16, 18.07] 0.389	-0.65 [-8.53, 7.23] 0.869	0.05 [-5.64, 5.75] 0.985
Has Child	6.1 [-4.32, 16.51] 0.245	0.25 [-4.66, 5.17] 0.918	-1.1 [-4.22, 2.02] 0.482
Married	3.97 [-3.6, 11.54] 0.297	1.09 [-5.82, 8.01] 0.752	3.44 [-0.57, 7.45] 0.091
Income over $50,000	30.18 [20.64, 39.73] 0	7.72 [2.71, 12.73] 0.003	3.83 [0.97, 6.7] 0.01
Policy Covariates			
Medical Cannabis Law	-0.7 [-1.22, -0.18] 0.01	-0.47 [-0.89, -0.05] 0.028	-0.08 [-0.27, 0.1] 0.353
Medical Dispensary	-0.44 [-0.95, 0.07] 0.089	-0.33 [-0.74, 0.07] 0.106	-0.04 [-0.18, 0.1] 0.561
Beer Tax Rate	2.08 [-0.85, 5.01] 0.16	0.64 [-0.7, 1.97] 0.342	0.48 [-0.31, 1.26] 0.232
Cigarette Tax Rate	0.09 [-0.24, 0.43] 0.575	0.05 [-0.17, 0.27] 0.653	-0.02 [-0.18, 0.15] 0.853
Behavioral Risk Factor Surveillance System Response Location			
Non-MSA[c]	-	-	-
MSA[c]	-7.36 [-12.55, -2.17] 0.006	-4.29 [-6.99, -1.59] 0.002	-2.2 [-3.44, -0.96] 0.001
Cell Phone	2.48 [-0.16, 5.11] 0.065	1.17 [-0.81, 3.15] 0.24	1.04 [-0.18, 2.26] 0.093

eTable 2. Associations of Recreational Cannabis Laws with Drinking Behavior: F-Statistic for Test of Joint Significance of Leads Prior to Implementation, Individual Leads Prior to Implementation, and Lags After Implementation, Overall and by Sociodemographic Groups[a]

Sociodemographic Group, Drinking Behavior	Effect of Recreational Cannabis Law on Drinking Behavior (Percentage Points)						
		Year Relative to Recreational Cannabis Law Implementation					
	F-Statistic	-3	-2	-1	0	1	2
Overall							
Any	0.3	0.5	0	-	1.2*	0.6	1
Binge	-0.1	-0.2	0	-	0.5	0.2	0.4
Heavy	0.1	0.2	0.1	-	0.2	0.2	0.4
Age: 18-24							
Any	0.6	1.6	-0.4	-	3.8*	2.7*	4.5*
Binge	0.2	0.4	0.1	-	2	-0.1	1.3
Heavy[b]	0.9*	1.3	0.6	-	0.8	-0.9	0.2
Age: 25-34							
Any	1.5	1.6	1.5	-	2	0.6	0.5
Binge	0.2	-1.1	1.3	-	-0.8	0.7	0.2
Heavy	0.6	0.4	0.7	-	0.5	0.9	1*
Age: 35-49							
Any	0.1	0.9	-0.7	-	1	1.6	0.5
Binge	0.2	0.2	-0.3	-	0.2	1.3*	0.7
Heavy	0.2	0.4	0.1	-	-0.1	0.5	0.4
Age: 50-64							
Any	-0.5	-0.7	-0.4	-	0.3	-0.1	0.6
Binge	0.2	-0.1	0	-	1.6*	0.1	0.1
Heavy	-0.2	-0.3	0	-	0.3	0.1	0.6
Age: 65-79							
Any[a]	1.1*	1.5*	0.8	-	1.2	1	0.7
Binge	0.2	0.6	0.1	-	0.1	-1.2*	0.6
Heavy	0.1	0.2	0	-	0.1	0	-0.3
Age: 80+							
Any[a]	-2.1	-3.2	-0.9	-	-2.7	-4.4*	0.7
Binge	0.2	-0.5*	-0.8	-	-0.4	-0.6	0.2
Heavy	-0.7	-0.2	-1.2	-	-0.4	-0.3	-0.3
Race/Ethnicity: Non-Hispanic White							
Any	-0.2	-0.2	-0.3	-	0.8	0.6	0.6
Binge	-0.3	-0.5	-0.1	-	0.3	0.3	0.5
Heavy	-0.1	-0.1	0	-	0.2	0.3	0.4*
Race/Ethnicity: Non-Hispanic Black							
Any	3.1*	4*	2.4*	-	2.6*	0.4	2.7
Binge	-0.3	1	2.2*	-	0	0.1	-0.3
Heavy	0.1	-0.1	0.4	-	0	-0.1	1.6
Race/Ethnicity: Hispanic							
Any	-1.4	-1.6	-1.3	-	-0.1	-0.6	-1
Binge	-0.3	-2*	-0.1	-	1.5	0.1	0.6
Heavy	0.2	0	0.3	-	0.3	0.1	0
Sex: Male							
Any	0.1	0.2	0	-	1.1*	1.4*	1.7*
Binge	-0.1	-0.4	0.1	-	0.9*	0.9	0.5
Heavy	0.1	0.3	-0.1	-	0.2	0.5	0.6
Sex: Female							

Any	0.7*	1.1*	0.4	-	1.4	0.1	0.5
Binge	-0.1	0.2	0.3	-	0.3	-0.3	0.5
Heavy	0.4	0.3	0.5*	-	0.3	0.1	0.2
Education: No College							
Any	-0.2	0.3	-0.7	-	1.6*	1.4*	1.1
Binge	-0.2	-0.2	-0.2	-	0.6	0	0.5
Heavy	0.4*	0.4	0.4*	-	0	-0.3	0.1
Education: Some College							
Any	0.7	0.7	0.6	-	1	0.3	1.1
Binge	-0.2	-0.1	0.4*	-	0.7*	0.4	0.5
Heavy	0.1	0.1	0	-	0.4	0.5*	0.5

[a] Effects are estimated using a standard differences-in-differences approach described in the methods section. Each outcome is estimated as a function of recreational cannabis legalization, demographic and policy controls, and state-stack and quarter-stack fixed effects. Standard errors were clustered at the state level and respondents were weighted with standard Behavioral Risk Factor Surveillance System survey weights. The F-Statistic reports the results of a test on the joint significance of the lead terms.

[b] Lead terms are significant, meaning results should be considered with caution and not suggestive of the effects of recreational cannabis policy.

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

eTable 3. Associations of Recreational Cannabis Laws with Drinking Behavior: Stacked Difference-in-Differences Estimates, Overall and by Demographic Groups[a]

Sociodemographic Group	Effect of Recreational Cannabis Law on Drinking Behavior (Percentage Point Association, 95% CI, *P* Value)		
	Any Drinking	**Binge Drinking**	**Heavy Drinking**
Overall	**1 [0.1, 2] 0.039**	0.4 [-0.1, 1] 0.14	0.3 [-0.2, 0.7] 0.239
Age			
18-24	**3.2 [0.9, 5.5] 0.006**	1.3 [0, 2.7] 0.057	-0.4 [-1.3, 0.5] 0.35
25-34	0.8 [-0.9, 2.4] 0.34	-0.2 [-1.7, 1.3] 0.767	0.6 [-0.2, 1.5] 0.156
35-49	1 [-0.8, 2.7] 0.271	0.7 [-0.2, 1.5] 0.122	0.1 [-0.3, 0.6] 0.545
50-64	0.1 [-0.9, 1.1] 0.851	0.4 [-0.4, 1.3] 0.313	0.4 [-0.3, 1] 0.243
65-79	**1.5 [0.5, 2.5] 0.003**	-0.1 [-0.6, 0.4] 0.692	0.1 [-0.7, 0.8] 0.822
80+	-1.4 [-3.4, 0.6] 0.159	-0.4 [-1.4, 0.7] 0.488	-0.1 [-0.6, 0.5] 0.818
Race/Ethnicity			
Non-Hispanic White	0.4 [-0.2, 1] 0.166	0.3 [-0.4, 1] 0.341	0.4 [-0.1, 0.8] 0.129
Non-Hispanic Black	**2.1 [-0.3, 4.4] 0.082**	-0.1 [-1.2, 1.1] 0.88	0.4 [-0.8, 1.6] 0.485
Hispanic	-0.2 [-2.1, 1.8] 0.859	0.3 [-0.7, 1.2] 0.574	-0.2 [-0.7, 0.3] 0.401
Gender			
Male	**1.3 [0.4, 2.2] 0.007**	**0.9 [0.2, 1.6] 0.014**	0.4 [-0.2, 0.9] 0.22
Female	0.9 [-0.3, 2.1] 0.143	0 [-0.6, 0.5] 0.875	0.2 [-0.2, 0.6] 0.332
Education			
No College	**1.3 [0.6, 2.1] 0.001**	0.5 [-0.6, 1.6] 0.391	-0.1 [-0.4, 0.3] 0.662
Some College	0.9 [-0.3, 2.2] 0.15	0.5 [0, 1] 0.051	0.5 [-0.1, 1.1] 0.093

[a] Effects are estimated using a stacked differences-in-differences approach as in Cengiz et al. (2019). This approach eliminates comparisons between states that implemented recreational cannabis laws later to those that implement recreational cannabis laws earlier that can add bias to standard difference-in-differences estimates. Each outcome is estimated as a function of recreational cannabis legalization, demographic and policy controls, and state-stack and quarter-stack fixed effects. Standard errors were clustered at the state level and respondents were weighted with standard Behavioral Risk Factor Surveillance System survey weights.

eTable 4. Association of Recreational Cannabis Laws with Drinking Behavior: Difference-in-Differences Estimates with Sample Limited to States that Implemented a Medical Cannabis Law, Overall and by Sociodemographic Groups

Sociodemographic Group	Effect of Recreational Cannabis Law on Drinking Behavior (Percentage Point Association, 95% CI, *P* Value)		
	Any Drinking	**Binge Drinking**	**Heavy Drinking**
Overall	**0.8 [0.1, 1.6] 0.03**	0.4 [-0.2, 1.1] 0.207	0.1 [-0.2, 0.4] 0.445
Age			
18-24	**3.3 [0, 6.5] 0.048**	1.2 [-0.5, 2.8] 0.165	0.2 [-1, 1.5] 0.71
25-34	1.4 [-0.3, 3.1] 0.1	-0.3 [-1.9, 1.3] 0.704	0.4 [-0.5, 1.3] 0.339
35-49	1 [-0.6, 2.7] 0.223	1.1 [0, 2.1] 0.053	0 [-0.6, 0.6] 0.974
50-64	0.3 [-1.1, 1.6] 0.683	0.7 [-0.5, 1.9] 0.224	0.2 [-0.7, 1] 0.661
65-79	0.7 [-0.6, 2] 0.278	-0.1 [-0.6, 0.4] 0.583	0 [-0.7, 0.8] 0.988
80+	-2.6 [-5.3, 0] 0.052	-0.3 [-1.4, 0.8] 0.6	-0.6 [-1.5, 0.4] 0.252
Race/Ethnicity			
Non-Hispanic White	**0.7 [0.1, 1.3] 0.03**	0.4 [-0.4, 1.2] 0.289	0.1 [-0.2, 0.5] 0.434
Non-Hispanic Black	1.4 [-0.9, 3.8] 0.227	-0.1 [-1.4, 1.2] 0.873	0.4 [-0.6, 1.4] 0.415
Hispanic	0 [-2.2, 2.3] 0.98	0.4 [-1.3, 2.1] 0.631	-0.1 [-1, 0.8] 0.815
Gender			
Male	**1 [0.2, 1.9] 0.019**	**0.7 [0, 1.4] 0.037**	0.2 [-0.3, 0.7] 0.444
Female	0.8 [-0.2, 1.7] 0.109	0.2 [-0.6, 1] 0.562	0.1 [-0.3, 0.4] 0.612
Education			
No College	**1.3 [0.1, 2.4] 0.032**	0.3 [-1, 1.6] 0.65	-0.1 [-0.6, 0.3] 0.497
Some College	0.7 [-0.2, 1.6] 0.111	**0.6 [0.1, 1.1] 0.024**	0.2 [-0.1, 0.6] 0.168

[a] Effects were estimated limiting the sample to persons in states that implemented a medical cannabis law during the study period. This approach may provide a more similar comparison group for persons in states that implemented recreational cannabis laws. Each outcome was estimated as a function of recreational cannabis legalization, demographic and policy controls, and state and quarter fixed effects. Standard errors were clustered at the state level and respondents were weighted with standard Behavioral Risk Factor Surveillance System survey weights.

eTable 5. Association of Recreational Cannabis Laws with Drinking Behavior: Difference-in-Differences Estimates with Sample Limited to Treatment States and Comparison States with Similar Tobacco Taxes, Overall and by Sociodemographic Groups

Sociodemographic Group	Effect of Recreational Cannabis Law on Drinking Behavior (Percentage Point Association, 95% CI, *P* Value)		
	Any Drinking	Binge Drinking	Heavy Drinking
Overall	0.7 [-0.1, 1.5] 0.083	0.4 [-0.2, 1.1] 0.191	0.2 [-0.2, 0.6] 0.302
Age			
18-24	3.4 [0.3, 6.4] 0.032	1.4 [-0.3, 3.1] 0.107	0 [-1.4, 1.4] 0.984
25-34	1.1 [-0.9, 3] 0.269	0.1 [-1.8, 1.9] 0.934	0.8 [-0.3, 1.9] 0.154
35-49	0.8 [-0.9, 2.5] 0.34	0.9 [-0.1, 2] 0.074	0.2 [-0.4, 0.8] 0.589
50-64	0 [-1.3, 1.3] 0.972	0.6 [-0.5, 1.7] 0.299	0.2 [-0.6, 1] 0.637
65-79	0.9 [-0.5, 2.3] 0.181	-0.2 [-0.7, 0.4] 0.536	0 [-0.7, 0.7] 0.977
80+	-2.2 [-4.6, 0.2] 0.066	-0.1 [-1.1, 0.8] 0.778	-0.4 [-1.5, 0.6] 0.39
Race/Ethnicity			
Non-Hispanic White	0.6 [0, 1.2] 0.042	0.5 [-0.3, 1.2] 0.228	0.2 [-0.2, 0.6] 0.224
Non-Hispanic Black	1.7 [-0.8, 4.2] 0.174	0 [-1.5, 1.5] 0.984	0.5 [-0.7, 1.7] 0.402
Hispanic	-1 [-3.5, 1.4] 0.386	0.5 [-1.1, 2.1] 0.536	0 [-0.9, 0.9] 0.961
Gender			
Male	1.3 [0.3, 2.3] 0.011	1 [0.2, 1.8] 0.012	0.4 [-0.3, 1.1] 0.227
Female	0.6 [-0.6, 1.7] 0.316	0.3 [-0.5, 1.1] 0.465	0.1 [-0.3, 0.5] 0.501
Education			
No College	1.1 [-0.1, 2.3] 0.062	0.3 [-1.1, 1.7] 0.657	-0.1 [-0.6, 0.3] 0.48
Some College	0.6 [-0.3, 1.5] 0.199	0.7 [0.1, 1.2] 0.017	0.4 [-0.1, 1] 0.099

[a] Effects were estimated limiting the sample to persons in states that (a) implemented a recreational cannabis law during the study period, or (b) had at least a two dollar tobacco tax per pack of cigarettes. This approach provides a more similar comparison group in terms of tobacco taxes. Specifically, mean tobacco taxes per pack were $3.12 in the treatment group. In the baseline comparison group, they were $2.50. In the comparison group used here, they are $3.05. Each outcome was estimated as a function of recreational cannabis legalization, demographic and policy controls, and state and quarter fixed effects. Standard errors were clustered at the state level and respondents were weighted with standard Behavioral Risk Factor Surveillance System survey weights.

eTable 6. Association of Recreational Cannabis Laws with Drinking Behavior: Difference-in-Differences Estimates without Demographic and Policy Covariates, Overall and by Sociodemographic Groups

Sociodemographic Group	Effect of Recreational Cannabis Law on Drinking Behavior (Percentage Point Association, 95% CI, *P* Value)		
	Any Drinking	**Binge Drinking**	**Heavy Drinking**
Overall	**0.9 [0.1, 1.7] 0.021**	0.4 [-0.3, 1] 0.241	0.3 [-0.1, 0.6] 0.171
Age			
18-24	**3.7 [1.1, 6.3] 0.006**	1.1 [-0.5, 2.8] 0.179	0.1 [-1.2, 1.4] 0.883
25-34	1.1 [-0.7, 3] 0.226	-0.1 [-1.7, 1.6] 0.951	0.8 [-0.2, 1.7] 0.105
35-49	1.1 [-0.7, 2.8] 0.239	0.7 [-0.2, 1.6] 0.125	0.2 [-0.3, 0.8] 0.398
50-64	0.3 [-1.1, 1.6] 0.674	0.7 [-0.3, 1.8] 0.177	0.3 [-0.5, 1.1] 0.419
65-79	1 [-0.2, 2.2] 0.104	-0.2 [-0.7, 0.3] 0.443	0 [-0.7, 0.6] 0.911
80+	-2.3 [-4.7, 0.1] 0.06	-0.3 [-1.2, 0.7] 0.582	-0.3 [-1.2, 0.5] 0.433
Race/Ethnicity			
Non-Hispanic White	**0.7 [0, 1.3] 0.048**	0.4 [-0.4, 1.2] 0.357	**0.3 [0, 0.6] 0.055**
Non-Hispanic Black	2 [-0.5, 4.5] 0.11	-0.1 [-1.5, 1.3] 0.89	0.4 [-0.8, 1.6] 0.532
Hispanic	-0.6 [-2.8, 1.7] 0.617	0.7 [-0.9, 2.3] 0.405	0.1 [-0.8, 1.1] 0.769
Gender			
Male	**1.4 [0.4, 2.3] 0.006**	**0.8 [0.1, 1.5] 0.031**	0.4 [-0.2, 1] 0.18
Female	0.8 [-0.2, 1.7] 0.118	0.2 [-0.6, 0.9] 0.664	0.2 [-0.2, 0.6] 0.282
Education			
No College	**1.4 [0.4, 2.4] 0.006**	0.4 [-0.9, 1.6] 0.548	-0.1 [-0.4, 0.3] 0.73
Some College	0.8 [-0.2, 1.7] 0.102	0.5 [0, 1] 0.056	0.5 [0, 1] 0.068

[a] Effects were estimated limiting the sample to persons in states that implemented a medical cannabis law during the study period. This approach may provide a more similar comparison group for persons in states that implemented recreational cannabis laws. Each outcome was estimated as a function of recreational cannabis legalization, demographic and policy controls, and state and quarter fixed effects. Standard errors were clustered at the state level and respondents were weighted with standard Behavioral Risk Factor Surveillance System survey weights.