

Appendix
Simultaneous Alcohol/Cannabis Use and Driving Under the Influence in the U.S.
Gonçalves et al.

Appendix Table 1. Associations of Each Sociodemographic Characteristics and Substance Use Variables With DUI Categories

Characteristics	DUI alcohol-only X no DUI		DUI cannabis-only X no DUI		DUI alcohol and cannabis X no DUI		DUI alcohol and cannabis X DUI alcohol-only		DUI alcohol and cannabis X DUI cannabis-only	
	UOR (95% CI)	AOR (95% CI)	UOR (95% CI)	AOR (95% CI)	UOR (95% CI)	AOR (95% CI)	UOR (95% CI)	AOR (95% CI)	UOR (95% CI)	AOR (95% CI)
	Age group, years									
16–20	0.26 (0.20, 0.34) **	0.29 (0.22, 0.39) **	2.36 (2.01, 2.77) **	2.55 (2.17, 3.00) **	1.44 (1.19, 1.75) **	1.61 (1.31, 1.98) **	5.46 (4.06, 7.35) **	5.50 (4.02, 7.52) **	0.61 (0.47, 0.79) **	0.63 (0.49, 0.82) **
21–25	0.83 (0.68, 1.02)	1.04 (0.84, 1.29)	2.04 (1.77, 2.35) **	2.16 (1.86, 2.49) **	2.41 (1.96, 2.97) **	2.76 (2.21, 3.44) **	2.89 (2.16, 3.87) **	2.64 (1.94, 3.59) **	1.18 (0.93, 1.51)	1.28 (1.00, 1.64)
26–34	1.09 (0.88, 1.36)	1.20 (0.96, 1.51)	1.57 (1.31, 1.89) **	1.62 (1.34, 1.96) **	1.97 (1.60, 2.42) **	2.07 (1.66, 2.58) **	1.80 (1.36, 2.39) **	1.72 (1.28, 2.32) ^b **	1.25 (0.94, 1.67)	1.28 (0.95, 1.72)
35–49	1.22 (1.01, 1.48) *	1.24 (1.02, 1.52) *	1.34 (1.13, 1.58) **	1.37 (1.15, 1.63) **	1.56 (1.28, 1.90) **	1.59 (1.28, 1.97) **	1.28 (0.97, 1.68)	1.28 (0.96, 1.70)	1.17 (0.93, 1.47)	1.16 (0.91, 1.47)
≥50	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
Sex										
Male	1.26 (1.12, 1.42) **	1.19 (1.05, 1.36) *	1.44 (1.33, 1.56) **	1.52 (1.39, 1.66) **	1.86 (1.68, 2.06) **	1.91 (1.71, 2.12) **	1.48 (1.27, 1.71) **	1.69 (1.37, 1.87) **	1.29 (1.14, 1.47) **	1.25 (1.10, 1.43) **
Female	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
Ethnicity										
Non-Hispanic White	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
Non-Hispanic Black	0.32 (0.25, 0.41) **	0.38 (0.29, 0.50) **	1.02 (0.92, 1.12)	0.97 (0.87, 1.07)	0.84 (0.73, 0.97) *	0.84 (0.72, 0.98) *	2.63 (2.04, 3.40) **	2.22 (1.69, 2.93) **	0.83 (0.72, 0.95) **	0.87 (0.75, 1.01)
Hispanic	0.65 (0.54, 0.79) **	0.73 (0.59, 0.91) **	0.95 (0.81, 1.10)	0.80 (0.68, 0.94) **	0.99 (0.88, 1.11)	0.87 (0.76, 0.99) *	1.52 (1.24, 1.86) **	1.18 (0.95, 1.48)	1.05 (0.88, 1.25)	1.08 (0.91, 1.29)
Others	0.60 (0.47, 0.77) **	0.64 (0.49, 0.82) **	0.92 (0.75, 1.13)	0.86 (0.69, 1.08)	0.77 (0.67, 0.89) *	0.73 (0.63, 0.85) *	1.29 (0.97, 1.71)	1.16 (0.86, 1.56)	0.84 (0.70, 1.02)	0.85 (0.70, 1.04)
Family income										
<\$20,000	0.32 (0.27, 0.38) **	0.39 (0.32, 0.48) **	1.14 (1.04, 1.26) **	1.08 (0.97, 1.21)	0.69 (0.61, 0.78) **	0.68 (0.61, 0.77) **	2.17 (1.79, 2.62) **	1.75 (1.42, 2.16) **	0.60 (0.53, 0.69) **	0.63 (0.54, 0.73) **
\$20,000–\$39,999	0.44	0.47	1.17	1.18	0.91 (0.80, 1.03)	0.88	2.08	1.87	0.77	0.75

Appendix
Simultaneous Alcohol/Cannabis Use and Driving Under the Influence in the U.S.
Gonçalves et al.

	(0.37, 0.52) **	(0.39, 0.57) **	(1.07, 1.28) **	(1.07, 1.29) **		(0.78, 1.00) *	(1.69, 2.56) **	(1.51, 2.33) **	(0.68, 0.88) **	(0.66, 0.85) **
\$40,000–\$74,999	0.75 (0.64, 0.87) **	0.77 (0.65, 0.91) **	1.18 (1.05, 1.32) **	1.18 (1.05, 1.33) **	1.00 (0.88, 1.13)	0.96 (0.84, 1.10)	1.33 (1.10, 1.60) **	1.25 (1.02, 1.53) *	0.85 (0.73, 0.98) *	0.82 (0.70, 0.95) **
≥\$75,000	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
Any tobacco use, past year										
Yes	1.11 (0.99, 1.24)	1.24 (1.08, 1.43) **	1.72 (1.60, 1.86) **	1.57 (1.46, 1.70) **	2.07 (1.88, 2.28) **	1.91 (1.72, 2.12) **	1.87 (1.61, 2.17) **	1.53 (1.30, 1.81) **	1.20 (1.07, 1.35) **	1.21 (1.07, 1.38) **
No	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
Any drug use other than cannabis, past year										
Yes	1.60 (1.38, 1.85) **	1.71 (1.43, 2.05) **	2.43 (2.18, 2.71) **	2.26 (2.02, 2.53) **	3.88 (3.50, 4.30) **	3.72 (3.35, 4.14) **	2.43 (2.12, 2.78) **	2.18 (1.86, 2.55) **	1.60 (1.41, 1.80) **	1.64 (1.45, 1.87) **
No	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
Daily alcohol use, last year (≥300 days)										
Yes	2.51 (2.02, 3.10) **	2.19 (1.73, 2.78) **	0.69 (0.56, 0.85) **	0.79 (0.63, 1.00) *	1.98 (1.66, 2.36) **	2.17 (1.78, 2.64) **	0.79 (0.62, 1.01)	0.99 (0.76, 1.29)	2.87 (2.32, 3.54) **	2.74 (2.16, 3.48) **
No	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
Daily cannabis use, last year (≥300 days)										
Yes	0.10 (0.06, 0.16) **	0.10 (0.06, 0.16) **	5.11 (4.61, 5.66) **	5.15 (4.57, 5.80) **	3.30 (2.89, 3.78) **	3.17 (2.74, 3.67) **	33.14 (20.65, 53.18)**	31.93 (19.14, 53.28)**	0.65 (0.57, 0.74) **	0.62 (0.53, 0.71) **
No	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
Living in a MML state										
Yes	0.88 (0.76, 1.01)	0.77 (0.66, 0.90) **	0.87 (0.80, 0.94) **	0.91 (0.84, 0.99) *	0.88 (0.80, 0.96) **	0.87 (0.79, 0.96) **	1.00 (0.88, 1.15)	1.13 (0.97, 1.32)	1.01 (0.91, 1.13)	0.96 (0.85, 1.08)
No	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
Simultaneous alcohol/cannabis use										
Yes	0.45 (0.37, 0.57) **	0.46 (0.36, 0.59) **	4.25 (3.91, 4.62) **	4.28 (3.89, 4.71) **	4.46 (4.02, 4.95) **	4.39 (3.92, 4.93) **	9.79 (7.70, 12.45) **	9.48 (7.29, 12.33) **	1.05 (0.94, 1.17)	0.85 (0.74, 0.99) *
No	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref

Note: Boldface indicates statistical significance (* $p < 0.05$; ** $p < 0.01$). Estimates were obtained using Multinomial Logistic Regression models of DUI categories of ≥16 year old drivers who reported any use of alcohol and cannabis in the past year (NSDUH 2016–2019, N=34,514).

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DUI, driving under the influence; UOR, unadjusted conditional odds ratio; AOR, adjusted conditional odds ratio; MML, medical marijuana law; NSDUH, National Survey on Drug Use and Health.