

Appendix
Dual Use of Nicotine and Cannabis Through Vaping Among Adolescents
Moustafa et al.

Appendix Table 1. Distribution of Repeated Measures of Nicotine and Cannabis Vaping Across 7 Waves for Each of the 4 Latent Classes

Substance/Class/Vaping status	Wave 1 N (%)	Wave 2 N (%)	Wave 3 N (%)	Wave 4 N (%)	Wave 5 N (%)	Wave 6 N (%)	Wave 7 N (%)
Nicotine							
1							
Never	96 (37.1)	125 (48.3)	109 (42.1)	148 (57.1)	194 (74.9)	225 (86.9)	228 (88.0)
Ever	64 (24.7)	67 (25.9)	95 (36.7)	60 (23.2)	16 (6.2)	13 (5.0)	15 (5.8)
6 months	30 (11.6)	24 (9.3)	9 (3.5)	10 (3.9)	15 (5.8)	8 (3.1)	7 (2.7)
30 days	69 (26.6)	43 (16.6)	46 (17.8)	41 (15.8)	34 (13.1)	13 (5.0)	9 (3.5)
Total	259 (100.0)	259 (100.0)	259 (100.0)	259 (100.0)	259 (100.0)	259 (100.0)	259 (100.0)
2							
Never	74 (57.8)	71 (55.5)	37 (28.9)	18 (14.1)	24 (18.8)	15 (11.7)	22 (17.2)
Ever	15 (11.7)	22 (17.2)	31 (24.2)	22 (17.2)	10 (7.8)	8 (6.3)	9 (7.0)
6 months	14 (10.9)	15 (11.7)	10 (7.8)	12 (9.4)	11 (8.6)	13 (10.2)	12 (9.4)
30 days	25 (19.5)	20 (15.6)	50 (39.1)	76 (59.4)	83 (64.8)	92 (71.9)	85 (66.4)
Total	128 (100.0)	128 (100.0)	128 (100.0)	128 (100.0)	128 (100.0)	128 (100.0)	128 (100.0)
3							
Never	278 (88.8)	284 (90.7)	264 (84.3)	225 (71.9)	189 (60.4)	167 (53.4)	149 (47.6)
Ever	20 (6.4)	13 (4.2)	25 (8.0)	27 (8.6)	24 (7.7)	41 (13.1)	48 (15.3)
6 months	12 (3.8)	10 (3.2)	9 (2.9)	28 (8.9)	46 (14.7)	39 (12.5)	42 (13.4)
30 days	3 (1.0)	6 (1.9)	15 (4.8)	33 (10.5)	54 (17.3)	66 (21.1)	74 (23.6)
Total	313 (100.0)	313 (100.0)	313 (100.0)	313 (100.0)	313 (100.0)	313 (100.0)	313 (100.0)
4							
Never	1,099 (96.4)	1,127 (98.9)	1,125 (98.7)	1,121 (98.3)	1,134 (99.5)	1,131 (99.2)	1,122 (98.4)
Ever	16 (1.4)	7 (0.6)	9 (0.8)	10 (0.9)	1 (0.1)	2 (0.2)	6 (0.5)
6 months	19 (1.7)	3 (0.3)	1 (0.1)	3 (0.3)	1 (0.1)	5 (0.4)	7 (0.6)
30 days	6 (0.5)	3 (0.3)	5 (0.4)	6 (0.5)	4 (0.4)	2 (0.2)	5 (0.4)
Total	1,140 (100.0)	1,140 (100.0)	1,140 (100.0)	1,140 (100.0)	1,140 (100.0)	1,140 (100.0)	1,140 (100.0)
Cannabis							
1							

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Never	99 (38.2)	55 (21.2)	42 (16.2)	41 (15.8)	56 (21.6)	84 (32.4)	88 (34.0)
Ever	109 (42.1)	166 (64.1)	171 (66.0)	171 (66.0)	171 (66.0)	153 (59.1)	160 (61.8)
30 days	51 (19.7)	38 (14.7)	46 (17.8)	47 (18.1)	32 (12.4)	22 (8.5)	11 (4.2)
Total	259 (100.0)	259 (100.0)	259 (100.0)	259 (100.0)	259 (100.0)	259 (100.0)	259 (100.0)
2							
Never	96 (75.0)	80 (62.5)	40 (31.3)	14 (10.9)	3 (2.3)	3 (2.3)	6 (4.7)
Ever	22 (17.2)	34 (26.6)	43 (33.6)	50 (39.1)	35 (27.3)	36 (28.1)	43 (33.6)
30 days	10 (7.8)	14 (10.9)	45 (35.2)	64 (50.0)	90 (70.3)	89 (69.5)	79 (61.7)
Total	128 (100.0)	128 (100.0)	128 (100.0)	128 (100.0)	128 (100.0)	128 (100.0)	128 (100.0)
3							
Never	313 (100.0)	313 (100.0)	309 (98.7)	261 (83.4)	181 (57.8)	122 (39.0)	58 (18.5)
Ever	0 (0)	0 (0)	4 (1.3)	26 (8.3)	80 (25.6)	121 (38.7)	184 (58.8)
30 days	0 (0)	0 (0)	0 (0)	26 (8.3)	52 (16.6)	70 (22.4)	71 (22.7)
Total	313 (100.0)	313 (100.0)	313 (100.0)	313 (100.0)	313 (100.0)	313 (100.0)	313 (100.0)
4							
Never	1,132 (99.3)	1,139 (99.9)	1,140 (100.0)	1,140 (100.0)	1,140 (100.0)	1,140 (100.0)	1,140 (100.0)
Ever	4 (0.4)	1 (0.1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
30 days	4 (0.4)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Total	1,140 (100.0)	1,140 (100.0)	1,140 (100.0)	1,140 (100.0)	1,140 (100.0)	1,140 (100.0)	1,140 (100.0)

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Appendix Table 2. Multinomial Logistic Regression Analysis Comparing Class 1 and 2 to Class 3

Covariates	B	OR (95% CI)
Class 1 versus Class 3		
Sex	-0.22	0.81 (0.56, 1.17)
Black race	0.65	1.91* (1.13, 3.24)
Other race	0.37	1.45 (0.81, 2.61)
Non-Hispanic	-0.63	0.53** (0.35, 0.80)
Peer e-cigarette use	0.13	1.14** (1.04, 1.26)
Household e-cigarette use	-0.03	0.97 (0.59, 1.61)
Depressive symptoms	-0.01	0.99 (0.97, 1.01)
Sensation seeking	-0.01	1.00 (0.97, 1.03)
Combustible cigarette smoking	1.09	2.97** (1.46, 6.04)
Perceived e-cigarette benefits	0.01	1.00 (0.96, 1.04)
Positive e-cigarette expectations	0.11	1.12*** (1.07, 1.18)
Alcohol use	0.43	1.54 (0.98, 2.40)
Cigar use	0.68	1.96 (0.84, 4.60)
Class 2 versus Class 3		
Sex	-0.32	0.73 (0.46, 1.15)
Black race	0.27	1.30 (0.65, 2.60)
Other race	0.17	1.19 (0.55, 2.57)
Non-Hispanic	0.46	1.59 (0.87, 2.89)
Peer e-cigarette use	0.10	1.11 (0.99, 1.24)
Household e-cigarette use	-0.12	0.89 (0.48, 1.63)
Depressive symptoms	-0.01	0.99 (0.97, 1.01)
Sensation seeking	0.07	1.07*** (1.03, 1.11)
Combustible cigarette smoking	0.57	1.77 (0.76, 4.08)
Perceived e-cigarette benefits	-0.03	0.97 (0.92, 1.01)
Positive e-cigarette expectations	0.09	1.089** (1.02, 1.16)
Alcohol use	0.97	2.65*** (1.58, 4.43)
Cigar use	1.00	2.73* (1.10, 6.73)

Notes: Variable values are as follows: Sex (1=female), Race dummy coded with White as reference group (Black, 0=No 1=Yes; Other, 0=No 1=Yes), Ethnicity (0=Hispanic, 1=Non-Hispanic), Cigarette smoking (0=Never, 1=Ever), Alcohol use (past 6 months, 0=No 1=Yes), and Cigar smoking (past 6 months, 0=No 1=Yes). Boldface indicates statistical significance (* $p < 0.05$; ** $p < 0.01$; *** $p < 0.0001$).