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Figure S1. Study accrual flow chart

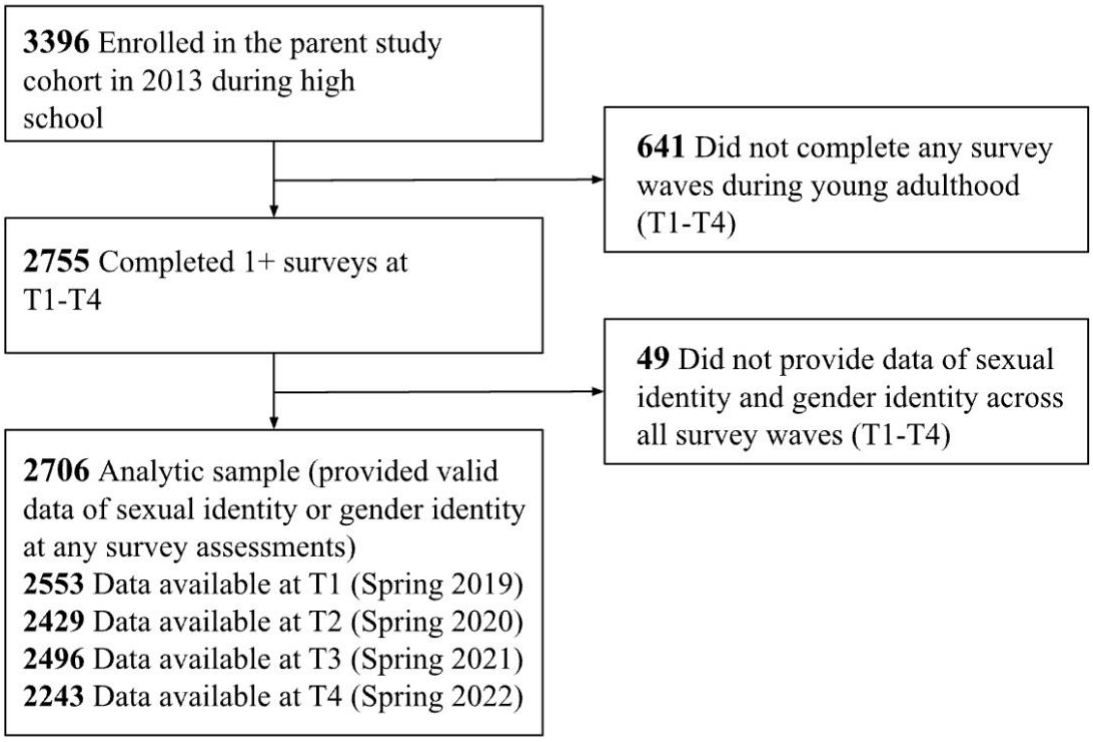


Table S1. Model intercepts and covariate estimates for association of sexual/gender identity with past 30-day cannabis use outcomes[a]

Regressors	Past 30-day use outcomes[b]											
	Combustible cannabis[c]		Vaped cannabis[c]		Edible cannabis[c]		Blunts[c]		Cannabis concentrates[c]		Number of cannabis products used[d]	
	RR (95%CI)	P	RR (95%CI)	P	RR (95%CI)	P	RR (95%CI)	P	RR (95%CI)	P	RR (95%CI)	P
Sexual identity												
Intercept	0.53 (0.04, 7.86)	.64	4.07 (0.22, 20.52)	.34	2.39 (0.08, 31.35)	.62	3.52 (0.11, 68.27)	.48	10.52 (0.86, 79.39)	.36	2.50 (0.33, 19.01)	.38
Age	1.12 (0.93, 1.35)	.24	0.92 (0.75, 1.12)	.40	0.96 (0.77, 1.21)	.74	1.03 (0.82, 1.30)	.79	0.86 (0.67, 1.16)	.38	0.97 (0.85, 1.12)	.71
Race/ethnicity												
Hispanic	REF	--	REF	--	REF	--	REF	--	REF	--	REF	--
Asian	0.65 (0.52, 0.83)	<.001	0.78 (0.61, 1.01)	.06	0.89 (0.70, 1.15)	.38	0.42 (0.30, 0.58)	<.001	0.49 (0.32, 0.75)	<.001	0.69 (0.58, 0.83)	<.001
African American	1.17 (0.85, 1.59)	.33	0.84 (0.57, 1.23)	.36	0.69 (0.45, 1.05)	.08	1.55 (1.05, 2.29)	.03	0.25 (0.15, 0.44)	<.001	0.93 (0.73, 1.20)	.59
White	1.08 (0.88, 1.31)	.48	0.96 (0.77, 1.20)	.70	1.03 (0.81, 1.31)	.83	0.76 (0.57, 1.01)	.06	1.10 (0.80, 1.50)	.56	0.96 (0.82, 1.14)	.66
Other	0.94 (0.76, 1.17)	.59	0.96 (0.76, 1.22)	.73	1.13 (0.87, 1.46)	.37	0.96 (0.72, 1.29)	.81	0.63 (0.43, 0.93)	.02	0.98 (0.83, 1.16)	.82
Financial status	0.73 (0.63, 0.84)	<.001	0.78 (0.67, 0.92)	.002	0.79 (0.67, 0.93)	.004	0.74 (0.61, 0.90)	.003	0.77 (0.60, 0.99)	.04	0.79 (0.71, 0.89)	<.001
Degree program	0.74 (0.65, 0.84)	<.001	0.79 (0.68, 0.92)	.002	0.83 (0.70, 0.97)	.02	0.60 (0.50, 0.72)	<.001	0.58 (0.46, 0.73)	<.001	0.80 (0.72, 0.88)	<.001
Employment status	1.17 (1.01, 1.36)	.04	1.25 (1.06, 1.47)	.009	1.25 (1.04, 1.50)	.02	1.43 (1.16, 1.75)	<.001	1.14 (0.90, 1.44)	.27	1.24 (1.10, 1.39)	<.001
Time	0.85 (0.71, 1.01)	.06	1.01 (0.85, 1.21)	.91	0.92 (0.75, 1.13)	.41	0.78 (0.60, 1.01)	.06	0.84 (0.65, 1.09)	.19	0.98 (0.86, 1.12)	.76
Gender identity												
Intercept	0.94 (0.01, 56.46)	.98	10.98 (0.30, 77.31)	.56	7.01 (0.02, 86.19)	.52	6.14 (0.01, 92.21)	.57	67.41 (0.72, 308.84)	.71	6.10 (0.18, 108.02)	.32
Age	1.01 (0.81, 1.25)	.95	0.80 (0.63, 1.01)	.06	0.88 (0.67, 1.16)	.37	0.89 (0.67, 1.19)	.44	0.72 (0.53, 0.99)	.04	0.93 (0.79, 1.09)	.36
Race/ethnicity												
Hispanic	REF	--	REF	--	REF	--	REF	--	REF	--	REF	--
Asian	0.66 (0.50, 0.89)	.006	0.77 (0.57, 1.03)	.08	0.85 (0.62, 1.16)	.30	0.46 (0.31, 0.70)	<.001	0.53 (0.32, 0.88)	.01	0.68 (0.55, 0.85)	<.001
African American	1.20 (0.85, 1.68)	.30	0.69 (0.42, 1.13)	.14	0.86 (0.49, 1.51)	.60	1.62 (1.03, 2.55)	.04	0.22 (0.10, 0.47)	<.001	0.91 (0.67, 1.22)	.52
White	1.20 (0.97, 1.50)	.10	0.98 (0.76, 1.27)	.88	1.09 (0.82, 1.45)	.55	0.83 (0.59, 1.16)	.27	1.04 (0.73, 1.49)	.81	1.01 (0.84, 1.21)	.91
Other	1.01 (0.78, 1.30)	.99	0.93 (0.70, 1.25)	.64	1.27 (0.93, 1.75)	.14	0.92 (0.64, 1.32)	.66	0.59 (0.35, 0.97)	.04	1.01 (0.82, 1.22)	.99
Financial status	0.69 (0.57, 0.83)	<.001	0.77 (0.63, 0.94)	.01	0.72 (0.58, 0.90)	.004	0.65 (0.50, 0.84)	.001	0.79 (0.59, 1.06)	.12	0.75 (0.65, 0.87)	<.001
Degree program	0.68 (0.58, 0.81)	<.001	0.74 (0.61, 0.89)	.002	0.77 (0.62, 0.95)	.02	0.52 (0.41, 0.66)	<.001	0.47 (0.36, 0.63)	<.001	0.75 (0.66, 0.86)	<.001
Employment status	1.26 (1.05, 1.51)	.01	1.27 (1.04, 1.56)	.02	1.27 (1.01, 1.59)	.04	1.52 (1.17, 1.97)	.002	1.22 (0.91, 1.65)	.19	1.32 (1.14, 1.52)	<.001
Time	0.92 (0.70, 1.15)	.37	0.99 (0.87, 1.14)	.88	0.98 (0.72, 1.25)	.43	0.83 (0.60, 1.08)	.10	0.92 (0.71, 1.10)	.32	0.86 (0.68, 1.05)	.29

[a] Analytic sample N = 2706.

[b] Negative binomial random-effect repeated-measure regression models for individual cannabis use outcomes. Time-varying associations of sexual/gender identity with each outcome are separately tested, adjusting for age, race/ethnicity, financial status, degree program enrollment, employment status, and time. Model intercepts and covariate estimates are reported. Rate ratios (RR) with 95% confidence intervals (95%CI) were calculated.

[c] Past 30-day use frequency (i.e., number of days; Range=0-30).

[d] Number of cannabis products (i.e., combustible cannabis, vaped cannabis, edible cannabis, blunts, and cannabis concentrates) used in past 30 days (Range=0-5).

Table S2. P-values from tests of possible interactive effects: (1) sexual identity × gender identity; (2) sexual identity and gender identity × changes in sexual and gender identity status; and (3) sexual identity and gender identity × time[a]

	Combustible cannabis	Vaped cannabis	Edible cannabis	Blunts	Cannabis concentrates	Number of cannabis products used
	P-int	P-int	P-int	P-int	P-int	P-int
Interaction Test 1						
Sexual Identity X Gender Identity	.19	.59	.07	.08	.31	.92
Interaction Test 2						
Sexual Identity (SI) X SI changes	.47	.64	.71	.86	.09	.74
Gender Identity (GI) X GI changes	.34	.03[b]	.12	.94	.73	.21
Interaction Test 3						
Sexual Identity X Time	.16	.74	.19	.03[c]	.02[d]	.26
Gender Identity X Time	.54	.44	.61	.95	.47	.52

[a] Negative binomial random-effect repeated-measure regression models for individual cannabis use outcomes. Each interaction term was individually tested in the primary adjusted models. P-value for likelihood ratio test was estimated for each interaction term.

[b] Associations of two gender identity groups (i.e., non-binary, transgender) with vaped cannabis were stronger in the group reporting any GI changes than the group without any GI changes: (1) Non-binary (RR[95%CI]=1.82[0.57, 6.43] for No GI changes and 8.04[2.99, 27.41] for Any GI changes; and (2) Transgender (RR[95%CI]=1.5[0.41, 5.76] for No GI changes and 6.13[2.05, 15.28] for Any GI changes).

[c] Significant interactions of sexual identity and time included (1) Gay/lesbian X Time (RR[95%CI]=1.72[1.08, 2.86]) and (2) Queer or other identity X Time (RR[95%CI]=1.84[1.04, 3.27]).

[d] Significant interactions of sexual identity and time included Queer or other identity X Time (RR[95%CI]=1.95[1.22, 3.02]).

Table S3. Cohen's d effect sizes for past 30-day cannabis use outcomes by sexual identity group (reference=heterosexual) and survey wave

Identity	Outcome	n	T1 d [95%CI]	n	T2 d [95%CI]	n	T3 d [95%CI]	n	T4 d [95%CI]
Asexual	Combustible	64	0.01 [-0.24, 0.26]	61	-0.26 [-0.52, -0.01]	60	-0.25 [-0.51, 0.01]	40	-0.09 [-0.40, 0.23]
	Vaped	64	-0.01 [-0.26, 0.24]	61	-0.04 [-0.30, 0.22]	60	0.04 [-0.21, 0.30]	40	0.03 [-0.28, 0.35]
	Edible	64	0.23 [-0.01, 0.48]	61	-0.10 [-0.35, 0.16]	60	-0.17 [-0.43, 0.08]	40	-0.12 [-0.43, 0.19]
	Blunts	64	0.20 [-0.05, 0.45]	61	-0.25 [-0.51, 0.00]	60	-0.15 [-0.40, 0.11]	40	-0.08 [-0.39, 0.24]
	Concentrates	64	0.12 [-0.13, 0.37]	61	-0.07 [-0.32, 0.19]	60	-0.12 [-0.38, 0.14]	40	-0.12 [-0.43, 0.20]
	Number of products	64	-0.01 [-0.26, 0.24]	61	-0.30 [-0.55, -0.04]	60	-0.12 [-0.38, 0.14]	40	-0.06 [-0.37, 0.26]
Bisexual	Combustible	199	0.30 [0.15, 0.44]	223	0.40 [0.26, 0.54]	213	0.39 [0.25, 0.54]	235	0.26 [0.13, 0.40]
	Vaped	200	0.25 [0.10, 0.39]	222	0.40 [0.26, 0.54]	213	0.21 [0.07, 0.35]	234	0.30 [0.16, 0.44]
	Edible	200	0.22 [0.08, 0.37]	223	0.32 [0.18, 0.46]	213	0.14 [0.00, 0.28]	235	0.11 [-0.03, 0.25]
	Blunts	200	0.16 [0.01, 0.30]	223	0.23 [0.09, 0.37]	213	0.09 [-0.05, 0.23]	235	0.12 [-0.02, 0.26]
	Concentrates	200	0.20 [0.05, 0.34]	223	0.28 [0.14, 0.42]	212	0.18 [0.03, 0.32]	235	0.16 [0.02, 0.29]
	Number of products	200	0.35 [0.21, 0.50]	223	0.47 [0.33, 0.60]	213	0.34 [0.20, 0.48]	235	0.27 [0.13, 0.41]
Gay/lesbian	Combustible	62	0.28 [0.02, 0.53]	68	0.27 [0.03, 0.51]	66	0.36 [0.12, 0.61]	69	0.41 [0.16, 0.65]
	Vaped	62	0.27 [0.02, 0.53]	68	0.36 [0.12, 0.60]	66	0.48 [0.23, 0.73]	69	0.23 [-0.01, 0.47]
	Edible	62	0.35 [0.10, 0.61]	68	0.31 [0.07, 0.55]	66	0.34 [0.10, 0.59]	69	0.14 [-0.10, 0.38]
	Blunts	62	0.19 [-0.06, 0.45]	68	-0.12 [-0.37, 0.12]	66	0.43 [0.18, 0.67]	69	0.25 [0.01, 0.50]
	Concentrates	62	0.27 [0.02, 0.52]	68	0.24 [0.00, 0.48]	66	0.29 [0.04, 0.54]	69	0.36 [0.12, 0.60]
	Number of products	62	0.41 [0.16, 0.66]	68	0.30 [0.05, 0.54]	66	0.38 [0.13, 0.63]	69	0.33 [0.09, 0.57]
Pansexual	Combustible	38	0.22 [-0.10, 0.54]	45	0.40 [0.11, 0.70]	51	0.68 [0.40, 0.96]	40	0.97 [0.65, 1.28]
	Vaped	38	0.02 [-0.30, 0.34]	45	0.00 [-0.29, 0.30]	50	0.18 [-0.11, 0.46]	40	0.58 [0.27, 0.90]
	Edible	38	0.19 [-0.13, 0.51]	45	-0.14 [-0.44, 0.16]	51	0.31 [0.03, 0.59]	40	0.45 [0.14, 0.77]
	Blunts	38	0.19 [-0.13, 0.51]	45	0.11 [-0.18, 0.41]	51	0.37 [0.09, 0.65]	40	0.71 [0.39, 1.02]
	Concentrates	38	-0.06 [-0.38, 0.26]	45	0.09 [-0.20, 0.39]	51	0.24 [-0.04, 0.52]	40	0.56 [0.25, 0.88]
	Number of products	38	0.26 [-0.06, 0.58]	45	0.17 [-0.12, 0.47]	51	0.35 [0.08, 0.63]	40	0.94 [0.62, 1.25]
Queer/other identity	Combustible	20	0.61 [0.17, 1.05]	26	0.59 [0.20, 0.98]	23	1.05 [0.64, 1.47]	26	0.64 [0.25, 1.03]
	Vaped	20	0.63 [0.19, 1.07]	26	0.41 [0.03, 0.80]	23	0.20 [-0.22, 0.61]	26	0.30 [-0.09, 0.69]
	Edible	20	0.21 [-0.23, 0.66]	26	0.83 [0.44, 1.22]	23	0.25 [-0.16, 0.67]	26	0.42 [0.03, 0.80]
	Blunts	20	-0.04 [-0.48, 0.40]	26	0.18 [-0.21, 0.57]	23	0.35 [-0.06, 0.76]	26	0.53 [0.14, 0.92]
	Concentrates	20	0.01 [-0.43, 0.45]	26	0.49 [0.10, 0.88]	23	0.65 [0.24, 1.06]	26	0.10 [-0.28, 0.49]
	Number of products	20	0.66 [0.22, 1.10]	26	0.66 [0.27, 1.05]	23	0.43 [0.02, 0.84]	26	0.25 [-0.14, 0.64]

Identity	Outcome	n	T1 d [95%CI]	n	T2 d [95%CI]	n	T3 d [95%CI]	n	T4 d [95%CI]
Questioning	Combustible	42	-0.06 [-0.37, 0.25]	63	0.12 [-0.13, 0.37]	73	0.18 [-0.06, 0.41]	72	0.13 [-0.10, 0.37]
	Vaped	42	0.17 [-0.13, 0.48]	63	0.30 [0.05, 0.55]	73	0.31 [0.07, 0.54]	72	0.05 [-0.19, 0.28]
	Edible	42	-0.02 [-0.33, 0.29]	63	0.10 [-0.15, 0.35]	73	0.04 [-0.19, 0.28]	72	0.14 [-0.10, 0.37]
	Blunts	42	-0.21 [-0.51, 0.10]	63	0.06 [-0.19, 0.31]	73	0.00 [-0.24, 0.23]	72	-0.04 [-0.27, 0.20]
	Concentrates	42	-0.17 [-0.48, 0.14]	63	-0.07 [-0.33, 0.18]	73	-0.11 [-0.34, 0.12]	72	-0.01 [-0.25, 0.23]
	Number of products	42	0.09 [-0.22, 0.39]	63	0.23 [-0.02, 0.49]	73	0.29 [0.06, 0.53]	72	0.14 [-0.10, 0.37]

Note. Cohen's *d* compares each sexual identity group with heterosexual participants within the same survey wave. Positive values indicate higher cannabis use in the listed group relative to heterosexual participants. Effect sizes are unadjusted and were calculated from observed means using the pooled standard deviation of the two groups compared. Values in brackets are 95% confidence intervals. Participants who preferred not to disclose their identity were excluded.

Table S4. Cohen's d effect sizes for past 30-day cannabis use outcomes by gender identity group (reference=female/feminine) and survey wave

Identity	Outcome	n	T1 d [95%CI]	n	T2 d [95%CI]	n	T3 d [95%CI]
Male/masculine	Combustible	993	0.03 [-0.05, 0.12]	940	0.02 [-0.06, 0.10]	831	-0.01 [-0.10, 0.07]
	Vaped	993	0.01 [-0.07, 0.09]	940	0.01 [-0.07, 0.09]	831	-0.01 [-0.10, 0.08]
	Edible	993	0.02 [-0.06, 0.11]	940	0.00 [-0.09, 0.08]	831	0.04 [-0.05, 0.13]
	Blunts	993	-0.03 [-0.12, 0.05]	940	-0.04 [-0.12, 0.05]	831	-0.07 [-0.15, 0.02]
	Concentrates	994	0.01 [-0.07, 0.10]	941	0.04 [-0.04, 0.13]	831	0.08 [-0.01, 0.17]
	Number of products	994	-0.01 [-0.09, 0.08]	941	-0.02 [-0.10, 0.07]	831	-0.03 [-0.12, 0.06]
Transgender	Combustible	10	0.87 [0.25, 1.49]	7	1.50 [0.75, 2.24]	12	0.85 [0.28, 1.42]
	Vaped	10	0.26 [-0.36, 0.88]	7	1.87 [1.12, 2.61]	11	0.68 [0.08, 1.27]
	Edible	10	0.92 [0.30, 1.54]	7	-0.16 [-0.90, 0.58]	12	0.22 [-0.34, 0.79]
	Blunts	9	0.79 [0.14, 1.45]	7	0.66 [-0.09, 1.40]	12	0.12 [-0.45, 0.69]
	Concentrates	10	0.11 [-0.51, 0.74]	7	1.11 [0.36, 1.85]	12	0.39 [-0.18, 0.96]
	Number of products	10	0.29 [-0.33, 0.91]	7	0.90 [0.15, 1.64]	12	0.44 [-0.12, 1.01]
Non-binary	Combustible	23	0.30 [-0.11, 0.71]	37	0.58 [0.25, 0.90]	57	0.46 [0.20, 0.73]
	Vaped	23	0.46 [0.04, 0.87]	37	0.20 [-0.12, 0.53]	57	0.28 [0.01, 0.54]
	Edible	23	0.92 [0.51, 1.33]	37	0.58 [0.25, 0.91]	57	0.21 [-0.06, 0.47]
	Blunts	23	0.59 [0.18, 1.00]	37	0.06 [-0.27, 0.39]	57	-0.03 [-0.29, 0.24]
	Concentrates	23	0.79 [0.37, 1.20]	37	0.21 [-0.11, 0.54]	57	0.27 [0.00, 0.54]
	Number of products	23	0.31 [-0.10, 0.73]	37	0.21 [-0.11, 0.54]	57	0.31 [0.05, 0.58]

Note. Cohen's *d* compares each gender identity group with female/feminine participants within the same survey wave. Positive values indicate higher cannabis use in the listed group relative to female/feminine participants. Effect sizes are unadjusted and were calculated from observed means using the pooled standard deviation of the two groups compared. Values in brackets are 95% confidence intervals. Gender identity was not assessed at T4. Participants who preferred not to disclose their identity were excluded.