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Supplemental information

Polysubstance addiction patterns

among 7,989 individuals with cocaine use disorder

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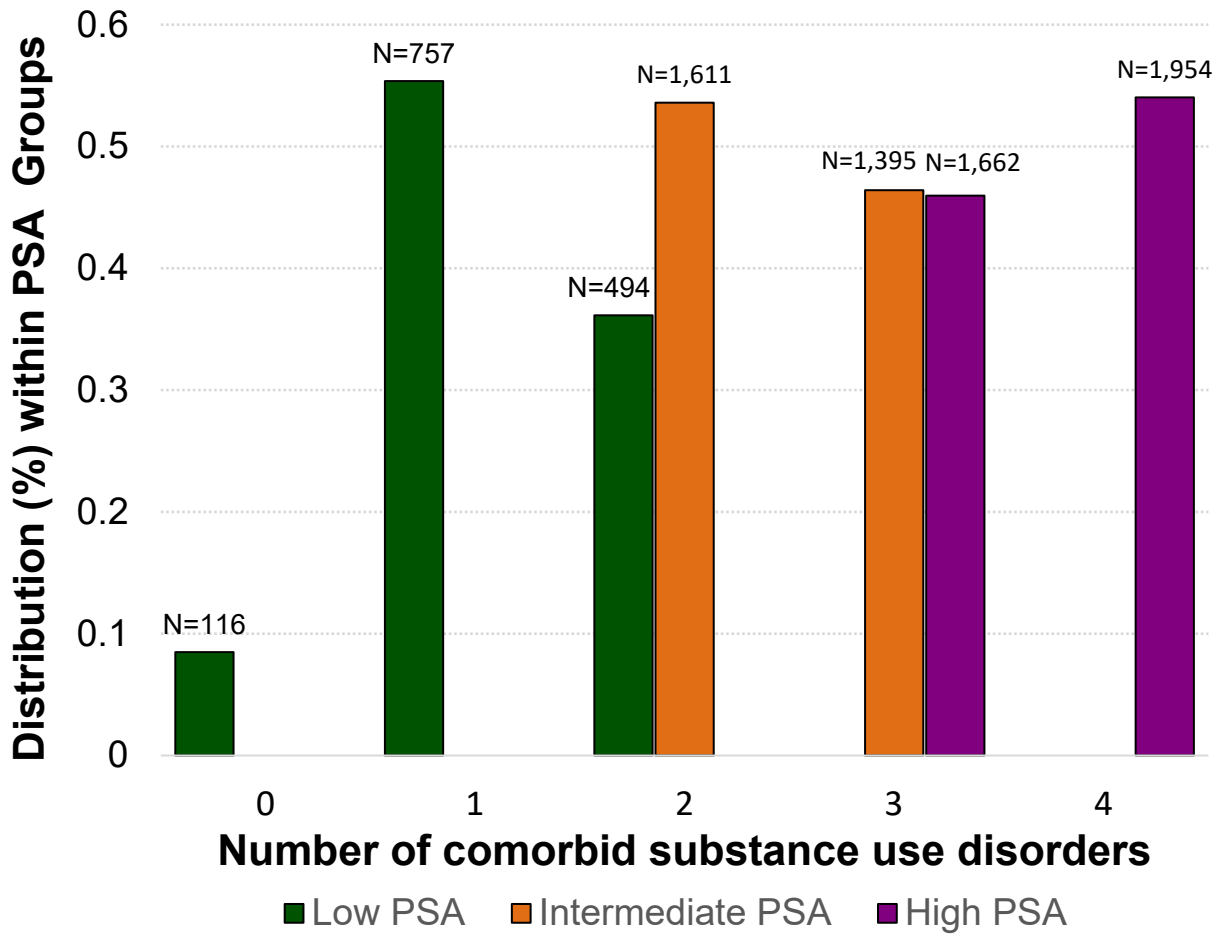


Figure S1. Count of Comorbid Substance use disorders in each subgroup, related to Table 1.
 Note. PSA = Polysubstance addiction.

Table S1. Prevalence of Other Substance dependencies in Sample, related to STAR Methods.

Substance dependence	Count, n (%)
Speedballs	932 (12)
Sedatives	794 (10)
Stimulants	588 (7)
Hallucinogens	227 (3)
Ecstasy	179 (2)
PCP	167 (2)
Solvents	18 (0)
Inhalants	9 (0)
Prescription drugs	6 (0)
Amphetamines	5 (0)
Ketamine	5 (0)
Nitrous Oxide	4 (0)

PCP = Phencyclidine.

Table S2. SUD distribution in African Americans and European Americans, related to Table 1.

Subgroup	SUD	European Americans	African Americans
Full CoUD Sample, n (%)	AUD	2514 (87)	2999 (80)
	CaUD	1836 (63)	1966 (52)
	OUD	2041 (70)	1055 (28)
	TUD	2580 (89)	3162 (84)
Low-PSA Subgroup, n (%)	AUD	124 (34)	225 (29)
	CaUD	22 (6)	53 (7)
	OUD	220 (61)	193 (25)
	TUD	181 (50)	379 (49)
Intermediate- PSA Subgroup, n (%)	AUD	887 (85)	1276 (86)
	CaUD	301 (29)	415 (28)
	OUD	705 (68)	391 (26)
	TUD	886 (86)	1285 (86)
High-PSA Subtype, n (%)	AUD	1513 (100)	1498 (100)
	CaUD	1513 (100)	1498 (100)
	OUD	1116 (74)	471 (31)
	TUD	1513 (100)	1498 (100)

SUD = Substance use disorder, AUD = Alcohol use disorder, CaUD = Cannabis use disorder, OUD = Opioid use disorder, TUD = Tobacco use disorder.

Table S3. Fit Statistics for Latent Class Models of SUD Criteria in the Low-PSA Subgroup. The best fits are highlighted in yellow. Related to Figure 1.

SUD	# of classes	Log-likelihood	df	AIC	BIC	BLRT	Entropy
AUD	2	-4432.54	1344	8911.07	9031.14	0.00	0.97
	3	-4163.08	1332	8396.16	8578.88	0.04	0.95
	4	-4137.38	1320	8368.76	8614.12	0.06	0.92
	5	-4121.95	1308	8361.91	8669.91	0.06	0.93
CaUD	2	-2063.42	1344	4172.84	4292.91	0.20	0.98
	3	-2046.41	1332	4162.82	4345.53	0.10	0.98
	4	-2033.66	1320	4161.33	4406.68	0.14	0.98
OUD	2	-3607.58	1344	7261.16	7381.23	0.00	0.99
	3	-3265.57	1332	6601.14	6783.86	0.00	0.96
	4	-3226.73	1320	6547.47	6792.82	0.04	0.91
	5	-3195.09	1308	6508.18	6816.18	0.06	0.92
TUD	2	-5148.40	492	10406.80	10505.99	0.00	0.92
	3	-5062.57	482	10183.14	10334.53	0.00	0.87
	4	-5025.74	472	10129.48	10333.07	0.16	0.85
	5	-5013.09	462	10124.18	10379.97	0.18	0.81

SUD = Substance use disorder, df = Degrees of freedom, AIC = Akaike information criterion, BIC = Bayesian information criterion, BLRT = Bootstrap likelihood ratio test, AUD = Alcohol use disorder, CaUD = Cannabis use disorder, OUD = Opioid use disorder, TUD = Tobacco use disorder.

Table S4. Fit Statistics for Latent Class Models of SUD Criteria in the Intermediate-PSA Subgroup. The best fits are highlighted in yellow. Related to Figure 1.

SUD	# of classes	Log-likelihood	df	AIC	BIC	BLRT	Entropy
AUD	2	-16602.02	2024	33250.04	33388.23	0.00	0.91
	3	-15959.66	2012	31989.33	32199.62	0.00	0.83
	4	-15796.07	2000	31686.13	31968.53	0.00	0.77
	5	-15736.55	1988	31591.10	31945.60	0.00	0.73
	6	-15702.00	1976	31546.00	31972.59	0.02	0.70
CaUD	2	-10428.86	2024	20903.72	21041.91	0.00	0.94
	3	-10182.42	2012	20434.84	20645.13	0.00	0.89
	4	-10118.68	2000	20331.37	20613.76	0.00	0.88
	5	-10088.93	1988	20295.85	20650.35	0.02	0.87
OUD	2	-8514.57	2024	17075.14	17213.33	0.00	0.99
	3	-7635.17	2012	15340.34	15550.63	0.00	0.97
	4	-7555.21	2000	15204.41	15486.80	0.00	0.93
	5	-7480.84	1988	15079.68	15434.17	0.00	0.94
	6	-7451.72	1976	15045.44	15472.03	0.06	0.89
TUD	2	-14690.76	492	29419.51	29533.67	0.00	0.84
	3	-14252.09	482	28562.17	28736.42	0.00	0.79
	4	-14144.11	472	28366.22	28600.55	0.00	0.77
	5	-14073.90	462	28245.79	28540.20	0.18	0.68
	6	-14058.35	452	28234.69	28589.18	0.54	0.70

SUD = Substance use disorder, df = Degrees of freedom, AIC = Akaike information criterion, BIC = Bayesian information criterion, BLRT = Bootstrap likelihood ratio test, AUD = Alcohol use disorder, CaUD = Cannabis use disorder, OUD = Opioid use disorder, TUD = Tobacco use disorder.

Table S5. Fit Statistics for Latent Class Models of SUD Criteria in the High-PSA Subgroup. The best fits are highlighted in yellow. Related to Figure 1.

SUD	# of classes	Log-likelihood	df	AIC	BIC	BLRT	Entropy
AUD	2	-18912.64	2024	37871.28	38013.72	0.00	0.85
	3	-18570.65	2012	37211.29	37428.05	0.00	0.74
	4	-18483.11	2000	37060.22	37351.29	0.00	0.72
	5	-18421.15	1988	36960.31	37325.70	0.00	0.72
	6	-18390.51	1976	36923.02	37362.74	0.00	0.73
CaUD	2	-24867.86	2024	49781.72	49924.16	0.00	0.75
	3	-24618.05	2012	49306.11	49522.87	0.00	0.75
	4	-24476.60	2000	49047.20	49338.27	0.00	0.69
	5	-24402.75	1988	48923.49	49288.89	0.00	0.74
	6	-24347.38	1976	48836.76	49276.47	0.00	0.70
OUD	2	-10770.16	2024	21586.31	21728.75	0.00	0.99
	3	-9617.73	2012	19305.46	19522.22	0.00	0.96
	4	-9461.16	2000	19016.32	19307.40	0.00	0.91
	5	-9351.70	1988	18821.40	19186.80	0.00	0.92
	6	-9312.35	1976	18766.71	19206.42	0.02	0.90
TUD	2	-16817.71	492	33673.43	33791.10	0.00	0.65
	3	-16695.83	482	33449.65	33629.25	0.00	0.60
	4	-16621.40	472	33320.80	33562.33	0.00	0.59
	5	-16584.13	462	33266.25	33569.71	0.00	0.60
	6	-16571.11	452	33260.22	33625.62	0.00	0.60

SUD = Substance use disorder, df = Degrees of freedom, AIC = Akaike information criterion, BIC = Bayesian information criterion, BLRT = Bootstrap likelihood ratio test, AUD = Alcohol use disorder, CaUD = Cannabis use disorder, OUD = Opioid use disorder, TUD = Tobacco use disorder.

Table S6. Cocaine use disorder criteria endorsed in the Full-CoUD sample and in the CoUD Subgroups, related to Figure 1.

Criterion, n (%)	Full-CoUD sample (n=7989)	Low-PSA Subgroup (n=1367)	Intermediate-PSA Subgroup (n=3006)	High-PSA Subgroup (n=3616)
Hazardous Use	4733 (59)	540 (40)	1664 (55)	2529 (70)
Social Problems	6824 (85)	1072 (78)	2521 (84)	3231 (89)
Neglected Roles	5285 (66)	769 (56)	1908 (63)	2608 (72)
Withdrawal	6073 (76)	887 (65)	2225 (74)	2961 (82)
Tolerance	5473 (69)	777 (57)	2012 (67)	2684 (74)
Larger Amounts Used	7060 (88)	1120 (82)	2618 (87)	3322 (92)
Attempts Quit	7425 (93)	1278 (93)	2783 (93)	3364 (93)
Time Spent	6626 (83)	1060 (78)	2445 (81)	3121 (86)
Physical Problems	7114 (89)	1128 (83)	2653 (88)	3333 (92)
Activities given up	6161 (77)	940 (69)	2260 (75)	2961 (82)
Craving	5800 (73)	835 (61)	2135 (71)	2830 (78)

Note. CoUD = Cocaine use disorder, PSA = Polysubstance addiction.

Table S7. Number of Cocaine use disorder criteria endorsed in the Full-CoUD sample and in the CoUD Subgroups, related to Figure 1.

Count, n (%)	Full CoUD sample (n=7989)	Low-PSA Subgroup (n=1367)	Intermediate- PSA Subgroup (n=3006)	High-PSA Subgroup (n=3616)
1	0 (0)	0 (0)	0 (0)	0 (0)
2	213 (3)	73 (5)	82 (3)	58 (2)
3	267 (3)	78 (6)	112 (4)	77 (2)
4	335 (4)	96 (7)	149 (5)	90 (2)
5	378 (5)	94 (7)	168 (6)	116 (3)
6	444 (6)	121 (9)	166 (6)	157 (4)
7	589 (7)	114 (8)	243 (8)	232 (6)
8	741 (9)	145 (11)	294 (10)	302 (8)
9	1071 (13)	186 (14)	418 (14)	467 (13)
10	1698 (21)	246 (18)	637 (21)	815 (23)
11	2253 (28)	214 (16)	737 (25)	1302 (36)

Note. CoUD = Cocaine use disorder, PSA = Polysubstance addiction.