

Supplementary Material:

Psychometric modeling of abuse and dependence symptoms across six illicit substances
indicates novel dimensions of misuse

Table S1. Substance factor loading estimates and standard errors for model M3

Symptoms	Substance Factors					
	Cannabis	Sedatives	Stimulants	Cocaine	Opioids	Hallucinogens
A1	0.34* (0.08)	0.34 (0.22)	0.49* (0.18)	0.46* (0.14)	0.40* (0.18)	0.31 (0.17)
A2	0.43* (0.11)	0.74* (0.26)	0.85* (0.27)	0.61* (0.10)	0.70* (0.26)	0.73* (0.27)
A3	0.55* (0.09)	0.79* (0.27)	0.71* (0.23)	0.72* (0.11)	0.82* (0.14)	0.43* (0.21)
A4	0.35* (0.12)	0.60* (0.27)	0.38* (0.17)	0.58* (0.09)	0.97* (0.15)	0.39* (0.18)
A5	0.49* (0.12)	0.43* (0.21)	0.34* (0.16)	0.63* (0.11)	0.47* (0.15)	0.56* (0.21)
A6	0.67* (0.12)	0.77* (0.28)	0.79* (0.25)	0.68* (0.10)	0.60* (0.19)	0.46 (0.25)
D1	0.58* (0.15)	0.59 (0.32)	0.55 (0.29)	0.81* (0.07)	0.68* (0.19)	0.82* (0.25)
D2	0.30* (0.13)	0.39* (0.19)	0.35* (0.15)	0.34* (0.11)	0.29 (0.17)	0.41* (0.17)
D3	0.74* (0.14)	0.74* (0.32)	0.81* (0.26)	0.84* (0.01)	0.71* (0.17)	0.60* (0.22)
D4	0.83* (0.13)	0.78* (0.34)	0.82* (0.27)	0.86* (0.08)	0.72* (0.26)	0.77* (0.32)
D5	0.64* (0.18)	0.42 (0.36)	0.46 (0.37)	0.79* (0.07)	0.71* (0.16)	0.67* (0.29)
D6	0.62* (0.23)	0.66 (0.34)	0.62* (0.28)	0.79* (0.11)	0.64* (0.19)	0.93* (0.32)
D7	0.63* (0.28)	0.70* (0.35)	0.68* (0.28)	0.72* (0.15)	0.70* (0.19)	0.66* (0.30)

Note. Factor loading estimates are following by their corresponding standard errors in parentheses. Symptom meaning: A1= Hazardous use; A2 = Consequences: legal; A3 = Consequences: Social; A4 = Consequences: Physical and psychological; A5 = Used often when doing something . . . important; A6 = Stay away from school\miss appointments; D1 = Used more of longer than thought\planned; D2 = Loss of control: unable to stop\desire to stop; D3 = Spend time taking\using it, recovering from it; D4 = Used instead of work\hobbies; D5 = Need for larger amounts\doses (tolerance); D6 = Withdrawal symptoms: Feeling sick when cutting down\stopping; D7 = Withdrawal symptoms: After not using . . . use to prevent sickness. * p -value < 0.05.

Table S2. Misuse symptom factor loading estimates and standard errors for model M3

Substances	Misuse Symptom Factors					
	A1	A2	A3	A4	A5	A6
Cannabis	0.63*	0.70*	0.58*	0.59*	0.52*	0.60*
	(0.05)	(0.14)	(0.08)	(0.13)	(0.08)	(0.11)
Sedatives	0.81*	0.52*	0.69*	0.58*	0.80*	0.69*
	(0.07)	(0.25)	(0.18)	(0.29)	(0.11)	(0.26)
Stimulants	0.78*	0.64*	0.65*	0.64*	0.74*	0.70*
	(0.07)	(0.26)	(0.13)	(0.14)	(0.07)	(0.18)
Cocaine	0.89*	0.66*	0.69*	0.49*	0.76*	0.69*
	(0.06)	(0.16)	(0.10)	(0.16)	(0.09)	(0.12)
Opioids	0.57*	0.63*	0.23	0.12	0.52*	0.49*
	(0.13)	(0.30)	(0.27)	(0.32)	(0.15)	(0.20)
Hallucinogens	0.59*	0.51	0.58*	0.45*	0.60*	0.55*
	(0.09)	(0.28)	(0.14)	(0.14)	(0.12)	(0.13)

Substances	D1	D2	D3	D4	D5	D6	D7
Cannabis	0.22	0.78*	0.35	0.12	0.30	0.37	0.56
	(0.29)	(0.06)	(0.30)	(0.41)	(0.30)	(0.27)	(0.33)
Sedatives	0.74*	0.90*	0.68*	0.58	0.84*	0.52*	0.71*
	(0.16)	(0.06)	(0.28)	(0.34)	(0.21)	(0.25)	(0.27)
Stimulants	0.72*	0.94*	0.56	0.40	0.83*	0.47*	0.63*
	(0.24)	(0.04)	(0.31)	(0.45)	(0.23)	(0.22)	(0.26)
Cocaine	0.16	0.85*	0.08	0.09	0.05	0.28	0.51*
	(0.26)	(0.05)	(0.25)	(0.32)	(0.24)	(0.22)	(0.23)
Opioids	0.74*	0.87*	0.86*	0.98*	0.69*	0.60*	0.77*
	(0.30)	(0.07)	(0.29)	(0.35)	(0.24)	(0.25)	(0.27)
Hallucinogens	0.26	0.84*	0.45	0.57	0.51	0.39	0.61
	(0.42)	(0.07)	(0.24)	(0.34)	(0.32)	(0.33)	(0.37)

Note. Factor loading estimates are following by their corresponding standard errors in parentheses. Symptom meaning: A1= Hazardous use; A2 = Consequences: legal; A3 = Consequences: Social; A4 = Consequences: Physical and psychological; A5 = Used often when doing something . . . important; A6 = Stay away from school\miss appointments; D1 = Used more of longer than thought\planned; D2 = Loss of control: unable to stop\desire to stop; D3 = Spend time taking\using it, recovering from it; D4 = Used instead of work\hobbies; D5 = Need for larger amounts\doses (tolerance); D6 = Withdrawal symptoms: Feeling sick when cutting down\stopping; D7 = Withdrawal symptoms: After not using . . . use to prevent sickness. **p*-value < 0.05.

Table S3. Substance factor correlation estimates and standard errors for model M3

Substance Factor	Cannabis	Sedatives	Stimulants	Cocaine	Opioids	Hallucinogens.
Cannabis	1.00 0.48					
Sedatives	(0.33) 0.63	1.00 0.67				
Stimulants	(0.34) 0.36	(0.38) 0.39	1.00 0.54			
Cocaine	(0.22) 0.17	(0.39) 0.56	(0.28) 0.49	1.00 0.65*		
Opioids	(0.35) 0.48	(0.83) 0.88*	(0.52) 0.73*	(0.31) 0.39	1.00 0.56	
Hallucinogens	(0.35)	(0.32)	(0.31)	(0.32)	(0.49)	1.00

Note. Correlation estimates are following by their corresponding standard errors in parentheses. **p*-value < 0.05.

Table S4. Misuse symptom factor correlation estimates and standard errors for model M3.

Misuse Factors	A1	A2	A3	A4	A5	A6	D1	D2	D3	D4	D5	D6	D7
A1	1.00												
A2	0.40* (0.12)	1.00											
A3	0.57* (0.09)	0.46* (0.15)	1.00										
A4	0.51* (0.13)	0.40 (0.21)	0.52* (0.16)	1.00									
A5	0.55* (0.08)	0.24 (0.17)	0.30* (0.14)	0.44* (0.13)	1.00								
A6	0.29* (0.14)	0.09 (0.22)	0.29 (0.19)	0.26 (0.22)	0.22 (0.15)	1.00							
D1	0.10 (0.27)	0.04 (0.37)	-0.02 (0.36)	0.40 (0.32)	-0.08 (0.25)	-0.02 (0.35)	1.00						
D2	-0.15 (0.09)	0.09 (0.14)	0.14 (0.12)	0.11 (0.15)	-0.13 (0.12)	0.12 (0.12)	0.01 (0.33)	1.00					
D3	0.08 (0.27)	0.07 (0.34)	-0.17 (0.35)	0.07 (0.29)	0.03 (0.27)	-0.21 (0.36)	0.36 (0.30)	-0.28 (0.23)	1.00				
D4	0.13 (0.33)	0.25 (0.40)	0.05 (0.47)	0.56 (0.41)	0.001 (0.38)	0.05 (0.64)	0.55 (0.36)	-0.24 (0.25)	0.42 (0.30)	1.00			
D5	0.08 (0.24)	0.09 (0.37)	-0.12 (0.38)	0.28 (0.28)	-0.10 (0.26)	0.05 (0.33)	0.73 (0.29)	-0.02 (0.23)	0.59 (0.42)	-0.65 (0.42)	1.00		
D6	0.03 (0.18)	-0.04 (0.41)	-0.10 (0.41)	0.50 (0.34)	-0.33 (0.33)	-0.19 (0.42)	0.58 (0.37)	0.12 (0.24)	0.60 (0.26)	0.60 (0.38)	0.96 (0.47)	1.00	
D7	0.09 (0.23)	0.17 (0.33)	-0.07 (0.31)	0.56* (0.24)	0.08 (0.24)	0.07 (0.36)	0.59 (0.26)	0.06 (0.21)	0.50 (0.23)	0.52 (0.31)	0.77* (0.25)	0.15 (0.24)	1.00

Note. Correlation estimates are following by their corresponding standard errors in parentheses. Symptom meaning: A1= Hazardous use; A2 = Consequences: legal; A3 = Consequences: Social; A4 = Consequences: Physical and psychological; A5 = Used often when doing something . . . important; A6 = Stay away from school\miss appointments; D1 = Used more of longer than thought\planned; D2 = Loss of control: unable to stop\desire to stop; D3 = Spend time taking\using it, recovering from it; D4 = Used instead of work\hobbies; D5 = Need for larger amounts\doses (tolerance); D6 = Withdrawal symptoms: Feeling sick when cutting down\stopping; D7 = Withdrawal symptoms: After not using . . .use to prevent sickness. **p*-value < 0.05.