



Validation of the Substance Use Protective Strategies Scale (SUPSS) among U.S. College Students



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CENTER ON ALCOHOL,
SUBSTANCE USE
& ADDICTIONS

INTRODUCTION

- Protective Behavioral Strategies (PBS) are behaviors that effectively reduce the likelihood of experiencing substance-related harms
- Despite the predominance of polysubstance use and the common co-occurrence of different substance use disorders, previous PBS research has been limited in terms of substance-specific measurement (i.e., alcohol, cannabis, opioids)
- We developed the Substance Use Protective Strategies Scale (SUPSS) to measure general substance use PBS
- SUPSS was validated among Polish young adults (aged 18-30) using various substances (Greń et al., 2023)
- This study sought to further examine and validate the SUPSS among US college students

METHOD

PARTICIPANTS/PROCEDURES

- Multisite online survey of substance use among college students recruited from 10 universities located in 8 US states (AK, CA, CO, ID, NM, TX, VA, and WA).
- US college students (n=1208) who reported substance use in the past month (88.4% alcohol, 43.9% cannabis, 3.8% stimulants)
- Sample characteristics: about 70% females, about 77% aged between 18 and 21 (36% freshman); 73% White, 11.1% Black or African American, 8.3% Asian, 3.1% American Indian or Alaska Native, 1.5% Native Hawaiian or Pacific Islander; about 43% Hispanic, Latino or of Spanish origin

MEASURES

- Alcohol PBS.** Protective Behavioral Strategies Scale-20 (PBSS-20; Treloar et al., 2015), 3 subscales: Stopping/Limiting Drinking (SLD), Manner of Drinking (MOD), and Serious Harm Reduction (SHR)
- Cannabis PBS.** Protective Behavioral Strategies for Marijuana (PBSM; Pedersen et al., 2017)
- Alcohol Use Severity.** Alcohol Use Disorders Identification Test (AUDIT; Babor et al., 1989)
- Cannabis Use Severity.** Cannabis Use Disorder Identification Test-Revised (CUDIT; Adamson et al., 2010)
- Alcohol Consequences.** Brief-Young Adult Alcohol Consequences Questionnaire (BYAACQ, Kahler et al., 2005)
- Cannabis Consequences.** Brief Marijuana Consequences Questionnaire (MACQ, Simons et al., 2012)

RESULTS

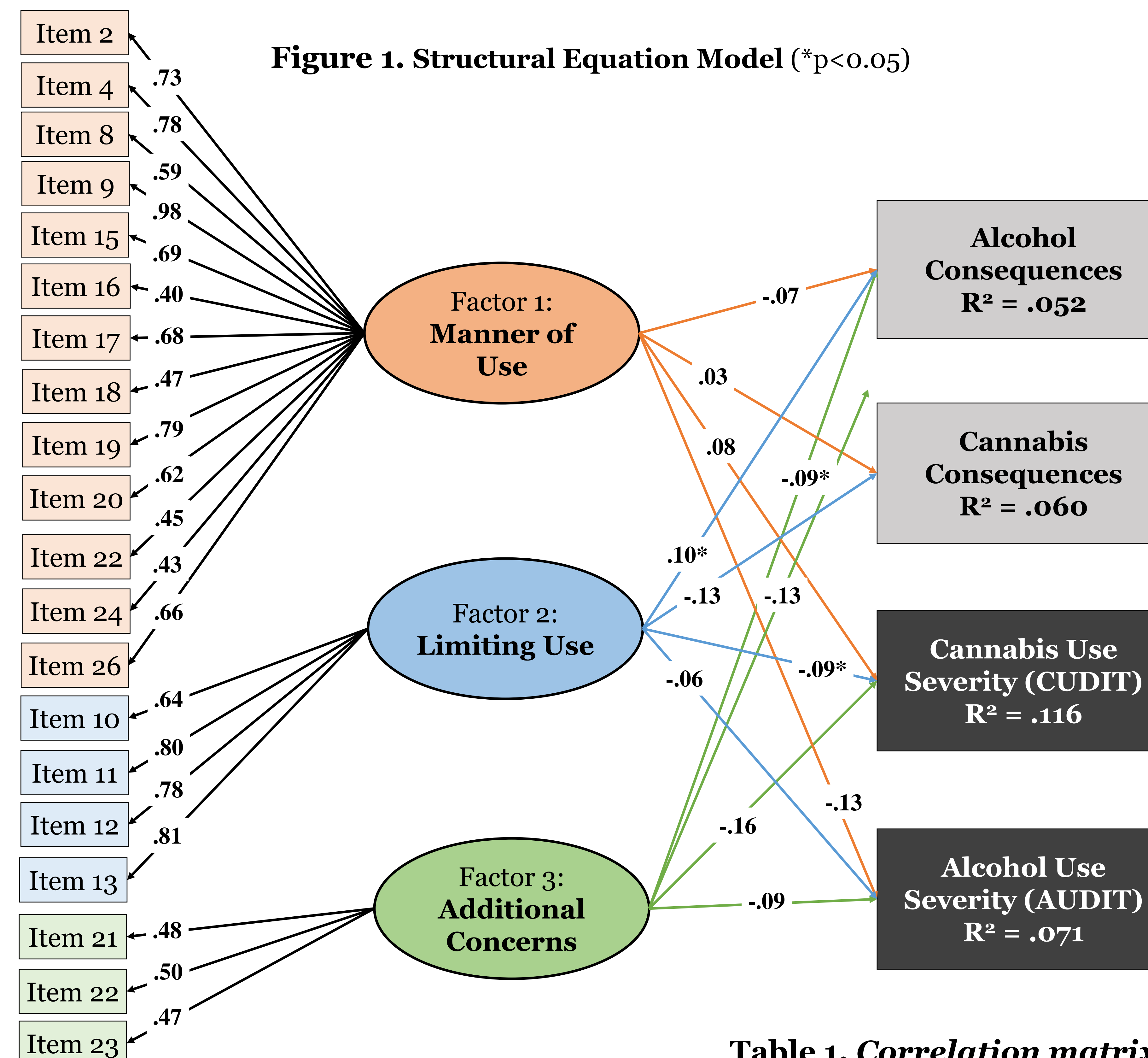


Table 1. Correlation matrix.

	1	2	3	4	5	6	7	8	9	10	11
1 SUPSS FACTOR 1	–										
2 SUPSS FACTOR 2	.78	–									
3 SUPSS FACTOR 3	.76	.64	–								
4 Alcohol PBS-SLD	.19	.26	.36	–							
5 Alcohol PBS-MOD	.17	.25	.19	.54	–						
6 Alcohol PBS-SHR	.39	.36	.34	.45	.40	–					
7 Cannabis PBS	.31	.36	.33	.84	.80	.77	–				
8 Alc. Use Severity	-.20	-.25	-.12	-.16	-.32	-.18	-.27	–			
9 Cann. Use Severity	-.21	-.29	-.21	-.08	-.01	-.24	-.14	.16	–		
10 Alc. Conseq.	-.14	-.18	-.06	-.11	-.25	-.14	-.21	.64	.27	–	
11 Cann. Conseq.	-.19	-.20	-.18	-.11	-.10	-.22	-.18	.15	.69	.38	–

Note: all correlations significant at the level p<0.05

RESULTS

- Using confirmatory factor analysis (CFA), we examined the 4-factor structure identified in the Polish young adult sample; this model fit poorly (CFI = .870, RMSEA = .074)
- Since we made several modifications to the scale when adapting for English-speaking participants and the high likelihood of cross-loading items, we conducted exploratory structural equation modeling (ESEM)
- Our ESEM results supported a 3-factor solution (Figure 1), with good model fit (CFI = .955, RMSEA = .035):
 - Factor 1 – „Manner of Use” (13 items; ω=.95),
 - Factor 2 – „Limiting Use” (4 items; ω=.90)
 - Factor 3 – „Additional concerns” (3 items; ω=.75)
- SUPSS factors were significantly and negatively correlated with substance-related outcomes (Table 1), and accounted for significant variance in substance-related outcomes (Figure 1), supporting its predictive validity
- SUPSS factors were moderately correlated with established substance-specific measures for both alcohol and cannabis, supporting its concurrent validity (Table 1)

CONCLUSIONS

Overall, we found further support for assessing general substance use PBS, which complements and extends the examination of substance-specific PBS.

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Item no.	Item content.	M (SD)
FACTOR 1: Manner of Use		
2	I avoid using substances if I do not know what they are.	5.55 (1.15)
4	I obtain substances from trusted sources.	5.31 (1.39)
8	I avoid using psychoactive substances when taking medication.	5.30 (1.44)
9	I avoid injecting substances.	5.66 (1.08)
15	I take into account my current responsibilities when deciding whether or how much to use substances.	5.40 (1.21)
16	I avoid using substances when I do not feel well (e.g., physically or mentally).	5.17 (1.30)
17	I resist peer pressure to use substances when I don't want to.	5.25 (1.27)
18	I avoid driving when intoxicated (e.g., use a designated driver) or riding with an intoxicated driver.	5.47 (1.17)
19	I eat and drink water regularly when I use substances.	5.12 (1.34)
20	I take care of my body's regeneration by sleeping when I use substances.	5.28 (1.27)
22	I pay attention to health changes that may be related to my substance use.	5.21 (1.34)
24	I take breaks from using substances when I experience uncomfortable effects.	5.23 (1.30)
26	I use substances in a safe setting and with trusted company.	5.43 (1.18)
FACTOR 2: Limiting Use		
10	I set and do not exceed my substance use limit on any given occasion.	4.93 (1.45)
11	I avoid being under the influence of substances for extended periods of time.	5.11 (1.40)
12	I take breaks between substance use occasions for as long as possible.	4.86 (1.56)
13	I avoid using large doses of substances.	5.09 (1.40)
FACTOR 3: Additional Concerns		
21	I take supplements (e.g., electrolytes, vitamins) to protect against negative health effect of substance use.	4.46 (1.81)
22	I pay attention to health changes that may be related to my substance use.	5.21 (1.34)
23	I use substances on planned occasions (i.e., not spontaneously).	4.80 (1.49)