

Supplemental Materials for

Emerging adults' public and private discussions of substance use on social media

The supplemental measures contain three additional analyses: 1) t-tests showing there were no differences between individuals who participated in this study compared to the larger study, 2) tables showing that the general pattern results of the regressions analyses remained when transformed substance variables were used and 3) tables showing consistent results from the regression analyses when no demographic covariates were added to the models.

1. T-tests of differences between groups

For those that participated in this study compared to the 12th grade sample, there were no demographic differences, including by gender, $\chi^2(1)=0.003$, $p=.96$, by race, $\chi^2(3)=5.39$, $p=.15$, or by income, $t(158)=0.14$, $p=.89$. There were also no differences between individuals who were (versus were not) included in this study in terms of reported 12th grade alcohol use ($M_{incl}=2.94$, $SD=1.68$; $M_{not}=2.88$, $SD=2.00$), marijuana use ($M_{incl}=2.74$, $SD=2.50$; $M_{not}=2.54$, $SD=2.38$), or tobacco use ($M_{incl}=2.39$, $SD=2.23$; $M_{not}=2.30$, $SD=2.31$), $t_{alcohol}(164)=0.16$, $p=.87$; $t_{marijuana}(159)=0.42$, $p=.67$; $t_{tobacco}(161)=0.18$, $p=.85$.

2. Regression analyses using transformed substance use variables

Although substance use variables were not highly skewed (under 2), substance use variables were logarithmically transformed to adjust for their potentially problematic kurtosis levels (ranged from 1.80 to 4.36) and non-normal distributions. Results from the ZIP (Table 1a) and OLS (Table 1b) regression models showed a pattern of the results similar to those in the

manuscript text, particularly in terms of effect sizes. Tobacco use in 12th grade no longer predicted the probability of posting about substances publicly on Facebook ($p=.05$). Tobacco use in 12th grade did predict the count of public FB posts about substances and the number of public substance FB posts predicted the level of post-high school tobacco use.

Supplemental Table 1a: Regression coefficients showing whether transformed 12th grade substance use predicts the likelihood and frequency of substance-related Facebook discussions.

	Facebook substance-related discussions	
	Public posts	Private messages
	<i>Zero-Inflation: b (SE)</i>	<i>Zero-Inflation: b (SE)</i>
	<i>Beta</i>	<i>Beta</i>
	<i>Count: b (SE)</i>	<i>Count: b (SE)</i>
	<i>Beta</i>	<i>Beta</i>
Alcohol use (12 th grade)	-1.66** (0.58) -0.36 -0.11 (0.54) -0.08	-1.30* (0.48) -0.19 0.25 (0.16) 0.23
Marijuana use (12 th grade)	-0.76* (0.35) -0.20 0.28 (0.19) 0.25	-1.27** (0.38) -0.20 0.38* (0.19) 0.39
Tobacco use (12 th grade)	-0.54 (0.34) -0.14 0.36** (0.12) 0.29	-1.14** (0.40) -0.18 0.42** (0.17) 0.36

Note: Each substance variable was log transformed and modeled separately. Models control for gender, college status, race/ethnicity, parent income, and the total number of posts or messages. * $p < .05$, ** $p < .01$. Bold indicates results that differ from the manuscript.

Supplemental Table 1b: Unstandardized and standardized regression coefficients showing whether substance-related Facebook discussions predicted reported levels and relative increases in substance use one year post high school (HS).

	Post-HS substance use		
	Alcohol Use	Marijuana Use	Tobacco Use
	<i>b (SE)</i> <i>Beta</i>	<i>b (SE)</i> <i>Beta</i>	<i>b (SE)</i> <i>Beta</i>
Public Posts	0.05* (0.03) 0.18	0.07** (0.03) 0.23	0.07* (0.03) 0.22
Public Posts (controlling for 12 th grade use)	0.01 (0.02) 0.04	0.05** (0.02) 0.18	0.03 (0.03) 0.11
Private Messages	0.02 (0.01) 0.25	0.03** (0.01) 0.42	0.01 (0.01) 0.16
Private Messages (controlling for 12 th grade use)	0.01 (0.01) 0.12	0.02** (0.01) 0.26	0.003 (0.01) 0.04

Note: Each substance variable was transformed and modeled separately. Models control for gender, college status, race/ethnicity, parent income, and the total number of posts or messages.

* $p < .05$, ** $p < .01$. Bold indicates results that differ from the manuscript.

3. Regression analyses without any demographic covariates

Regression models in the manuscript controlled for demographic characteristics based on previous research. For transparency, we conducted all analyses without these demographic covariates and only controlled for total Facebook activity. Results from the ZIP (Table 1a) and OLS (Table 1b) regression models showed a pattern of the results similar to those in the manuscript text. However, 12th grade alcohol use predicted the count of private messages and 12th grade marijuana and tobacco use predicted the count of public posts about substances. Public posts now predicted post high school tobacco use rates, but private messages no longer predicted relative increases in marijuana use.

Supplemental Table 2a: Unstandardized and standardized regression coefficients testing whether 12th grade substance use predicts the likelihood and frequency of substance-related Facebook discussions.

	Facebook substance-related discussions	
	Public posts	Private messages
	<i>Zero-Inflation: b (SE)</i>	<i>Zero-Inflation: b (SE)</i>
	<i>Beta</i>	<i>Beta</i>
	<i>Count: b (SE)</i>	<i>Count: b (SE)</i>
	<i>Beta</i>	<i>Beta</i>
Alcohol use (12 th grade)	-0.24* (0.11) -0.17 0.08 (0.12) 0.53	-0.35** (0.12) -0.16 0.16** (0.06) 0.67
Marijuana use (12 th grade)	-0.25* (0.10) -0.21 0.10 (0.05) 0.67	-0.35** (0.10) -0.18 0.23** (0.05) 0.84
Tobacco use (12 th grade)	-0.23* (0.09) -0.19 0.10* (0.04) 0.65	-0.34** (0.11) -0.17 0.19** (0.05) 0.77

Note: Each substance was modeled separately. Models controlled for the total number of Facebook posts or messages.

* $p < .05$, ** $p < .01$. Bold indicates results that differ from the manuscript.

Supplemental Table 2b: Unstandardized and standardized regression coefficients showing whether substance-related Facebook discussions predicted reported levels and relative increases in substance use one year post high school (HS).

Post-HS substance use			
	Alcohol Use	Marijuana Use	Tobacco Use
	<i>b (SE)</i> <i>Beta</i>	<i>b (SE)</i> <i>Beta</i>	<i>b (SE)</i> <i>Beta</i>
Public Posts	0.13* (0.06) 0.21	0.33** (0.08) 0.43	0.33* (0.14) 0.42
Public Posts (controlling for 12 th grade use)	0.03 (0.05) 0.05	0.19** (0.07) 0.30	0.13 (0.10) 0.21
Private Messages	0.06 (0.03) 0.31	0.10** (0.03) 0.44	0.05 (0.03) 0.21
Private Messages (controlling for 12 th grade use)	0.02 (0.02) 0.14	0.04 (0.02) 0.18	0.003 (0.01) 0.01

Note: Each substance was modeled separately. Models controlled for the total number of Facebook posts or messages and then 12th grade alcohol, marijuana, or tobacco use.

* $p < .05$, ** $p < .01$. Bold indicates results that differ from the manuscript.