SUPPLEMENTARY MATERIAL

Table 1: Characteristics of the analysis sample

Characteristic	Males (n=4323) n (weighted %)	Females (n=5493) n (weighted %)
CONTROL VARIABLES		
Race/Ethnicity[a] (WI)		
Hispanic	692 (12.2)	776 (10.7)
Black	721 (12.9)	1206 (15.4)
Asian	318 (3.6)	328 (3.3)
Native American	94 (2.5)	96 (1.9)
Other	38 (1.0)	43 (1.0)
White	2460 (67.9)	3044 (67.9)
Parental Education (WI)		
Less than high school	475 (10.7)	687 (11.1)
High school graduate	1023 (25.6)	1420 (28.4)
Some college	1298 (30.3)	1574 (28.9)
College graduate or higher	1527 (33.4)	1812 (31.6)
Age in years (mean (SD[b]))		
Wave I	15.5 (1.8)	15.3 (1.8)
Wave III	21.9 (1.9)	21.7 (1.8)
Wave IV	28.4 (1.9)	28.1 (1.8)
Childhood maltreatment frequency		
Never	1498 (34.8)	1732 (31.5)
Once	427 (9.7)	557 (10.2)
Twice	443 (10.2)	532 (9.4)
Three times	739 (17.1)	1035 (18.5)
Four or more times	1216 (28.3)	1637 (30.4)

[a] All other race/ethnicities are non-Hispanic
[b] SD: Standard deviation

Table 2: Linear mixed effects models of binge drinking frequency with depressive symptoms tested as a predictor (Self Medication) (n=9816)

	M1: Unconditional[a]	M2: Covariates[b]	M4: Age x Sex	M5: Depressive symptoms (adol.)[c]	M6: Depressive symptoms (adol.) x Age	M7: Depressive symptoms (adol.) x Age x Sex	M8: Depressive symptoms (longitudinal)	M9: Depressive symptoms (longitudinal) x Sex
Age	0.46***	0.45***	0.33***	0.50***	0.56***	0.43***	0.46***	0.46***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Age^2	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Sex (1=Male, 0=Female)		0.49***	-3.01***	0.49***	0.50***	-2.36***	0.50***	0.55***
		(0.03)	(0.37)	(0.03)	(0.03)	(0.42)	(0.03)	(0.05)
Race/ethnicity (white=referent)								
Hispanic		-0.12*	-0.12*	-0.13**	-0.13**	-0.13**	-0.13**	-0.13**
		(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Black		-0.45***	-0.45***	-0.46***	-0.46***	-0.46***	-0.46***	-0.46***
		(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Asian		-0.36***	-0.36***	-0.38***	-0.37***	-0.37***	-0.37***	-0.37***
		(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Native American		0.11	0.11	0.11	0.11	0.11	0.10	0.10
		(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)
Other		-0.13	-0.12	-0.13	-0.13	-0.12	-0.13	-0.13
		(0.17)	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)
Parental education (WI) (college=referent)								
< High school		-0.15**	-0.15**	-0.17***	-0.17***	-0.17**	-0.18***	-0.18***
		(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
High school		-0.06	-0.06	-0.08*	-0.08*	-0.08*	-0.08*	-0.08*
		(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
< College		-0.06	-0.07	-0.07	-0.07	-0.07	-0.07*	-0.07*
		(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Childhood maltreatment frequency								

(none=referent)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Once	0.13*	0.13*	0.13*	0.12*	0.12*	0.12	0.12
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Twice	0.07	0.07	0.06	0.06	0.06	0.05	0.06
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Three times	0.17***	0.18***	0.17***	0.16***	0.17***	0.15***	0.15***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Four or more times	0.11**	0.12**	0.10**	0.09*	0.10**	0.08*	0.08*
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Drank alcoholic beverage before WI	0.66***	0.66***	0.63***	0.65***	0.65***	0.65***	0.65***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Age x Sex		0.31***			0.25***		
		(0.04)			(0.04)		
Age^2 x Sex		-0.01***			-0.01***		
		(0.00)			(0.00)		
Depression diagnosis before WI			-0.07	-0.06	-0.06	-0.10	-0.10
			(0.08)	(0.08)	(0.08)	(0.08)	(0.08)
Depressive symptoms (adol.)			0.03***	0.42*	<-0.01		
			(0.00)	(0.19)	(0.21)		
Age x Depressive symptoms (adol.)				-0.04	0.01		
				(0.02)	(0.03)		
Depressive symptoms (adol.) x Sex					0.74		
					(0.40)		
Age x Depressive symptoms (adol.) x Sex					-0.10		
					(0.05)		
Age^2 x Depressive symptoms (adol.)				<0.01	<-0.01		
				(0.00)	(0.00)		

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Age^2 x Depressive symptoms (adol.) x Sex						0.003* (0.00)		
Depressive symptoms (longitudinal)							0.02*** (0.00)	0.02*** (0.00)
Depressive symptoms (longitudinal) x Sex								-0.01 (0.01)
Constant	-4.17*** (0.18)	-4.38*** (0.18)	-2.97*** (0.24)	-5.06*** (0.18)	-5.63*** (0.20)	-4.22*** (0.24)	-4.54*** (0.18)	-4.56*** (0.18)
Variance estimates (SE)								
Respondent ID	0.56 (0.02)	0.36 (0.02)	0.37 (0.02)	0.37 (0.02)	0.36 (0.02)	0.37 (0.02)	0.36 (0.02)	0.36 (0.02)
Residual	1.51 (0.03)	1.51 (0.03)	1.49 (0.03)	1.50 (0.03)	1.50 (0.03)	1.48 (0.03)	1.50 (0.03)	1.50 (0.03)

*** $p<0.001$, ** $p<0.01$, * $p<0.05$

[a] Standard errors are beneath the coefficients in parentheses

[b] A random slope for age was tested, but did not meaningfully improve model fit and so was removed from all models

[c] Adolescence (adol.)

Table 3: Linear mixed effects models of marijuana use frequency with depressive symptoms tested as a predictor (Self Medication) (n=9816)

	M1: Unconditional[a]	M2: Covariates[b]	M4: Age x Sex	M5: Depressive symptoms (adol.)[c]	M6: Depressive symptoms (adol.) x Age	M7: Depressive symptoms (adol.) x Age x Sex	M8: Depressive symptoms (longitudinal)	M9: Depressive symptoms (longitudinal) x Sex
Age	0.30***	0.30***	0.20***	0.31***	0.33***	0.22***	0.31***	0.31***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Age^2	-0.01***	-0.01***	-0.005***	-0.01***	-0.01***	-0.005***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Sex (1=Male, 0=Female)		0.28***	-2.30***	0.29***	0.29***	-2.06***	0.31***	0.30***
		(0.03)	(0.36)	(0.03)	(0.03)	(0.40)	(0.03)	(0.04)
Race/ethnicity (white=referent)								
Hispanic		0.01	0.01	0.01	<0.01	0.01	-0.01	-0.01
		(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Black		0.03	0.03	0.03	0.03	0.03	0.01	0.01
		(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Asian		-0.15**	-0.15**	-0.15**	-0.15**	-0.15**	-0.17***	-0.17***
		(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Native American		0.08	0.08	0.08	0.08	0.08	0.07	0.07
		(0.10)	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)
Other		0.03	0.04	0.04	0.03	0.04	0.04	0.04
		(0.14)	(0.14)	(0.14)	(0.14)	(0.14)	(0.13)	(0.13)
Parental education (WI) (college=referent)								
< High school		-0.03	-0.03	-0.04	-0.03	-0.03	-0.07	-0.07
		(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
High school		-0.05	-0.05	-0.05	-0.05	-0.05	-0.06	-0.06
		(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
< College		-0.01	-0.01	-0.02	-0.02	-0.02	-0.03	-0.03
		(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Childhood maltreatment frequency								

(none=referent)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Once	0.06 (0.04)	0.06 (0.04)	0.06 (0.04)	0.05 (0.04)	0.06 (0.04)	0.04 (0.04)	0.04 (0.04)
Twice	0.05 (0.04)	0.05 (0.04)	0.04 (0.04)	0.04 (0.04)	0.04 (0.04)	0.02 (0.04)	0.02 (0.04)
Three times	0.19*** (0.05)	0.19*** (0.05)	0.19*** (0.05)	0.19*** (0.05)	0.19*** (0.05)	0.16** (0.05)	0.16** (0.05)
Four or more times	0.21*** (0.04)	0.21*** (0.04)	0.20*** (0.04)	0.20*** (0.04)	0.20*** (0.04)	0.16*** (0.04)	0.16*** (0.04)
Marijuana use before WI	1.08*** (0.06)	1.08*** (0.06)	1.07*** (0.06)	1.07*** (0.06)	1.07*** (0.06)	1.06*** (0.06)	1.06*** (0.06)
Age x Sex		0.23*** (0.04)			0.21*** (0.04)		
Age^2 x Sex		-0.005*** (0.00)			-0.004*** (0.00)		
Depression diagnosis before WI			0.26* (0.12)	0.26* (0.12)	0.26* (0.12)	0.19 (0.12)	0.19 (0.12)
Depressive symptoms (adol.)			0.01 (0.00)	-0.45* (0.18)	-0.44* (0.18)		
Age x Depressive symptoms (adol.)				0.06** (0.02)	0.06** (0.02)		
Depressive symptoms (adol.) x Sex					-0.38 (0.40)		
Age x Depressive symptoms (adol.) x Sex					0.05 (0.05)		
Age^2 x Depressive symptoms (adol.)				-0.002** (0.00)	-0.001** (0.00)		

Age^2 x Depressive symptoms (adol.) x Sex						<0.01 (0.00)		
Depressive symptoms (longitudinal)							0.03*** (0.00)	0.03*** (0.00)
Depressive symptoms (longitudinal) x Sex								<0.01 (0.01)
Constant	-2.67*** (0.17)	-2.97*** (0.18)	-1.92*** (0.17)	-3.13*** (0.18)	-3.33*** (0.20)	-2.19*** (0.20)	-3.16*** (0.18)	-3.16*** (0.19)
Variance estimates (SE)								
Respondent ID	0.65 (0.03)	0.47 (0.02)	0.48 (0.02)	0.48 (0.02)	0.47 (0.02)	0.48 (0.02)	0.46 (0.02)	0.46 (0.02)
Residual	1.51 (0.05)	1.51 (0.05)	1.49 (0.05)	1.51 (0.05)	1.51 (0.05)	1.49 (0.05)	1.50 (0.05)	1.50 (0.05)

*** p<0.001, ** p<0.01, * p<0.05

a Standard errors are beneath the coefficients in parentheses

b A random slope for age was tested, but did not meaningfully improve model fit and so was removed from all models

c Adolescence (adol.)

Table 4: Linear mixed effects models of depressive symptoms with binge drinking frequency tested as a predictor (Stress Model) (n=9816)

	M5: Binge drinking frequency (adol.)[a,b]	M6: Binge drinking frequency (adol.) x Age	M7: Binge drinking frequency (adol.) x Age x Sex	M8: Binge drinking frequency (longitudinal)	M9: Binge drinking frequency (longitudinal) x Sex
Age	-0.32***	-0.32***	-0.34***	-0.44***	-0.44***
	(0.05)	(0.05)	(0.06)	(0.05)	(0.05)
Age^2	0.01***	0.01***	0.01***	0.01***	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Sex (1=Male, 0=Female)	-0.96***	-0.96***	-1.41	-0.99***	-0.85***
	(0.08)	(0.08)	(0.98)	(0.09)	(0.10)
Race/ethnicity (white=referent)					
Hispanic	0.51**	0.51**	0.51**	0.51**	0.51**
	(0.16)	(0.16)	(0.16)	(0.16)	(0.16)
Black	0.79***	0.79***	0.79***	0.85***	0.86***
	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)
Asian	0.82***	0.82***	0.82***	0.85***	0.85***
	(0.15)	(0.15)	(0.15)	(0.15)	(0.15)
Native American	0.48	0.49	0.49	0.50*	0.49
	(0.25)	(0.25)	(0.25)	(0.25)	(0.25)
Other	-0.09	-0.09	-0.09	-0.10	-0.09
	(0.40)	(0.39)	(0.40)	(0.42)	(0.42)
Parental education (WI) (college=referent)					
< High school	1.40***	1.40***	1.40***	1.52***	1.52***
	(0.16)	(0.16)	(0.16)	(0.16)	(0.16)
High school	0.65***	0.65***	0.65***	0.71***	0.71***
	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
< College	0.39***	0.39***	0.39***	0.42***	0.42***
	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
Childhood maltreatment frequency (none=referent)					
Once	0.60**	0.60**	0.60**	0.59**	0.58**
	(0.19)	(0.19)	(0.19)	(0.19)	(0.19)
Twice	0.80***	0.80***	0.79***	0.80***	0.80***
	(0.13)	(0.13)	(0.13)	(0.13)	(0.14)
Three times	0.95***	0.96***	0.95***	0.95***	0.95***
	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
Four or more times	1.83***	1.83***	1.82***	1.82***	1.82***
	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
Depression diagnosis before WI	2.79***	2.78***	2.76***	2.83***	2.82***

	(0.37)	(0.37)	(0.37)	(0.37)	(0.37)
Drank alcoholic beverage before WI	<-0.01	<-0.01	-0.01	0.13	0.13
	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)
Binge drinking frequency (adol.)	0.67***	-2.27	-7.32		
	(0.05)	(4.26)	(6.22)		
Age x Binge drinking frequency (adol.)		0.38	1.08		
		(0.54)	(0.80)		
Binge drinking frequency (adol.) x Sex			5.98		
			(8.96)		
Age x Sex			0.05		
			(0.09)		
Age x Binge drinking frequency (adol.) x Sex			-0.89		
			(1.13)		
Age^2 x Binge drinking frequency (adol.)		-0.01	-0.03		
		(0.02)	(0.03)		
Age^2 x Sex			<-0.01		
			(0.00)		
Age^2 x Binge drinking frequency (adol.) x Sex			0.03		
			(0.04)		
Binge drinking frequency (longitudinal)				0.16***	0.25***
				(0.03)	(0.04)
Binge drinking frequency (longitudinal) x Sex					-0.14**
					(0.05)
Constant	7.11***	7.08***	7.25***	8.63***	8.54***
	(0.50)	(0.50)	(0.68)	(0.51)	(0.51)
Variance estimates (SE)					
Respondent ID	10.07	10.05	9.82	11.05	10.79
	(2.25)	(2.26)	(2.25)	(2.30)	(2.29)
Residual	10.01	10.01	10.00	10.13	10.14
	(0.27)	(0.27)	(0.27)	(0.27)	(0.27)
Age	0.01	0.01	0.01	0.01	0.01
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

*** $p<0.001$, ** $p<0.01$, * $p<0.05$

a Standard errors are beneath the coefficients in parentheses

b Adolescence (adol.)

Table 5: Linear mixed effects models of depressive symptoms with marijuana frequency tested as a predictor (Stress Model) (n=9816)

	M5: Marijuana use frequency (adol.)[a,b]	M6: Marijuana use frequency (adol.) x Age	M7: Marijuana use frequency (adol.) x Age x Sex	M8: Marijuana use frequency (longitudinal)	M9: Marijuana use frequency (longitudinal) x Sex
Age	-0.34***	-0.33***	-0.36***	-0.43***	-0.43***
	(0.05)	(0.05)	(0.06)	(0.05)	(0.05)
Age^2	0.01***	0.01***	0.01***	0.01***	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Sex (1=Male, 0=Female)	-0.96***	-0.95***	-1.68	-1.00***	-0.89***
	(0.08)	(0.08)	(0.97)	(0.09)	(0.09)
Race/ethnicity (white=referent)					
Hispanic	0.48**	0.48**	0.48**	0.48**	0.48**
	(0.16)	(0.16)	(0.16)	(0.17)	(0.16)
Black	0.77***	0.77***	0.78***	0.77***	0.78***
	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)
Asian	0.79***	0.80***	0.80***	0.83***	0.83***
	(0.14)	(0.14)	(0.14)	(0.15)	(0.14)
Native American	0.43	0.43	0.43	0.45	0.45
	(0.25)	(0.25)	(0.25)	(0.25)	(0.25)
Other	-0.14	-0.14	-0.14	-0.11	-0.11
	(0.39)	(0.39)	(0.39)	(0.39)	(0.40)
Parental education (WI) (college=referent)					
< High school	1.46***	1.46***	1.46***	1.49***	1.50***
	(0.16)	(0.16)	(0.16)	(0.16)	(0.16)
High school	0.70***	0.70***	0.69***	0.71***	0.71***
	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
< College	0.41***	0.41***	0.41***	0.41***	0.41***
	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
Childhood maltreatment frequency (none=referent)					
Once	0.60**	0.60**	0.59**	0.60**	0.61**
	(0.19)	(0.19)	(0.19)	(0.19)	(0.19)
Twice	0.80***	0.80***	0.79***	0.80***	0.80***
	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)
Three times	0.96***	0.96***	0.96***	0.94***	0.94***
	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
Four or more times	1.80***	1.80***	1.80***	1.77***	1.77***
	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)

Depression diagnosis before WI	2.70***	2.70***	2.69***	2.70***	2.68***
	(0.36)	(0.36)	(0.36)	(0.37)	(0.36)
Marijuana use before WI	0.43***	0.44***	0.43***	0.47***	0.47***
	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)
Marijuana use frequency (adol.)	0.59***	-1.30	-6.55		
	(0.05)	(5.05)	(6.61)		
Age x Marijuana use frequency (adol.)		0.29	1.03		
		(0.63)	(0.84)		
Age x Sex			0.07		
			(0.09)		
Marijuana use frequency (adol.) x Sex			5.02		
			(9.69)		
Age x Marijuana use frequency (adol.) x Sex			-0.80		
			(1.21)		
Age^2 x Marijuana use frequency (adol.)		-0.01	-0.04		
		(0.02)	(0.03)		
Age^2 x Sex			<-0.01		
			(0.00)		
Age^2 x Marijuana use frequency (adol.) x Sex			0.03		
			(0.04)		
Marijuana use frequency (longitudinal)				0.19***	0.30***
				(0.02)	(0.04)
Marijuana use frequency (longitudinal) x Sex					-0.18***
					(0.05)
Constant	7.46***	7.37***	7.67***	8.49***	8.43***
	(0.49)	(0.50)	(0.68)	(0.50)	(0.50)
Variance estimates (SE)					
Respondent ID	10.51	10.41	10.33	11.06	11.13
	(2.24)	(2.25)	(2.24)	(2.25)	(2.25)
Residual	10.06	10.07	10.06	10.12	10.11
	(0.27)	(0.27)	(0.27)	(0.27)	(0.27)
Age	0.01	0.01	0.01	0.01	0.01
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

*** $p<0.001$, ** $p<0.01$, * $p<0.05$

a Standard errors are beneath the coefficients in parentheses
b Adolescence (adol.)